The Harveian Lectures
ON
PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.

Delivered before the Harveian Society of London on Nov. 1st, 8th, and 15th, 1900,

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LECTURE I.

Delivered on Nov. 1st, 1900.

MR. PRESIDENT AND GENTLEMEN,—I thank you heartily for the honour you have done me in asking me to deliver your annual Harveian Lectures. In choosing a subject for them I could not but be influenced by the methods used by the man whose name you have chosen to designate this society and these lectures. He trusted especially to observation and made theory subservient to this. Bacon's maxim of "Hypotheses non fingo" is said to be wrong, and taken literally no doubt is wrong. Newton, finding, as it is said, his facts after his theories, did good work and his method has been followed by some in our profession with success but only by few. Yet Newton first saw the apple fall before he reasoned from that fact, and therein he followed the Baconian method. Again, let us remember that Newton dealt with very simple sciences—only with astronomy, physics, and chemistry—nature in its normality, however complex that normality may be, and from normalities one may comparatively easily be led to certainties, as, indeed, Newton was. We on the other hand, have to deal with nature in its abnormality, a vastly more complex science, in which theories must be outside our knowledge until facts—much more indefinite than the fall of Newton's apple—are carefully observed. Let us start then by recording our facts in the way Bacon did, in which Newton actually did, though he is said to have pursued another process in his reasoning, and in which Harvey combined the methods of both. Let us only very carefully suggest theories after facts have been well observed and try not to go beyond those facts.

I wish to present to you facts and then conclusions from those facts. Therefore I have chosen a subject upon which I can deal with facts from a somewhat large experience, and can give you the conclusions which I myself have been able to draw from them. Thus I have taken as my subject, Prognosis and Treatment in Pulmonary Tuberculosis, and yet let me at once say that I do not intend to deal with the whole of those subjects. To do so would lead me beyond our three lectures and would cause me to tell you many things which you know already, and others which you can just as well read in the text-books or in the journals as you can learn from me. I wish only to give you points which I have learnt myself from experience and to ignore, as far as possible, those which I have learnt from others, as you also can learn them from others. I appeal for my facts especially to the records of the large number of patients intrusted to my care at the Brompton Hospital for Consumption and Diseases of the Chest, in the out-patient department, later to those of the in-patient department, and to others seen elsewhere. Again, I have made use of the records of the post-mortem rooms at the Brompton Hospital, at St. Mary's Hospital, and at the Manchester Royal Infirmary during the periods in which I was pathologist to those several institutions, while, finally, I will give you facts from experiments on animals and upon myself, mainly relating to a new method of treatment of pulmonary tuberculosis, which will be described in my third lecture. There I will describe how I have taken advantage of Harvey's great discovery, the circulation of the blood, and, as I hope, for practical advantage in the treatment of disease Such conclusions as I have been able to draw from the facts I will offer for your consideration, but I intend to make no inferences which the facts cannot reasonably warrant.

Prognosis ought to be based upon full diagnosis, that is, not the mere naming of the disease, but a knowledge of its nature and its course, and a power of appreciating the tendency of such course, and of the signs which indicate its progress. Prognosis sometimes seems to come to a man by instinct, or by what my late and most revered master, Sir William Roberts, used to call "clinical acumen." Some men, and only few, have this power, but even such persons, it has always appeared to me, arrived at their results from unconscious observation and reasoning. They would tell you that a certain course would be pursued by a certain case of disease and that they did not know why they thought so, yet such men have always had keen observation and, unknown to themselves, have reasoned from observed facts. For the majority of us to trust to any such instinct would be fatal to our conclusions, and we ought therefore carefully to reason only from well-observed facts.

Let us, then, apply the method I have mentioned to the prognosis and treatment of pulmonary tuberculosis, understanding by this disease, not all the cases which are vulgarly called "phthisis" or "consumption"—though we may by accident occasionally lapse into the use of these terms—but only those affections of the lungs which are accompanied and caused by the presence of the bacillus tuberculosis. And yet let us also remember in estimating our prognosis and in considering our treatment that the tubercle bacillus does not perform its noxious work alone but is aided by at least two other germs, the staphylococcus pyogenes, causing suppuration, and the pneumococcus, causing pneumonia, and each, together with the tubercle bacillus, causing poisoning of the general system by its own scarcely yet recognised product. We must then consider pulmonary tuberculosis, as seen clinically, to be a product of all these three germs, and we must form our prognostic opinion and our therapeutic methods upon observation of the effects which each or all of these germs has produced upon the lungs or upon the general system at any particular time.

We hear occasionally of a pre-bacillary stage of phthisis. This no doubt exists, but with it we have here nothing to do. We have been accustomed also to divide the conditions of pulmonary tuberculosis into three stages, according to their clinical manifestations, and to speak of (1) consolidation, (2) softening, and (3) cavitation—names useful enough in their way, but conveying not much to the mind beyond the condition of physical signs which causes their discovery.

Let us, for the purpose of prognosis, think again of three stages, similar to those already mentioned, but described rather in view of the pathological conditions which we know, or ought to know, are accompanying them, and we may style these stages, in view of the progressive action of the tubercle bacillus and its companions, (1) invasion, (2) progress, and (3) result. In each case we suppose the tubercle bacillus to be the main noxious germ, but, except after the quite early period, to be accompanied by the staphylococcus and pneumococcus. Further, the second stage in one part of a lung may undoubtedly be accompanied by the first stage in another neighbouring or remote part, and the third stage, "result" or destruction of lung-tissue, may be accompanied, similarly, by both the former stages.

Still another factor must be considered in our prognosis and that is the resistance of the lung and general body powers to the invasion of the bacillus—a most important matter, for by it many apparently pneumonic processes may be caused, and these may be not unhealthy but curative—"chemiotaxic," as they are called.

All these points must be considered in forming a prognosis and we must discuss them in certain of their aspects under these several headings.

And yet still something else must be defined before we approach the subject proper, and that is what we ought rightly to understand by prognosis in each of the above stages of the disease. In the first stage, that of invasion, we wish to attain to complete cure of the patient, an absolute arrest of the bacillary invasion, and a return of the lung to an entirely normal condition, and yet with the same tendency to re-infection which previously existed, a tendency innate in the subject. That tendency having once shown itself, perhaps being recognised for the first time on the outbreak of the lung trouble, may be combated by suitable means, but for a long period must remain hanging over the patient. Such is the most favourable result to which we can attain by the use of all remedies at our disposal, and its probability we style a "favourable prognosis."

When the disease has reached the second stage—that of progress of the bacillary infection—we still hope for arrest of the disease, but if this is to be accomplished it will only be after a certain amount of damage to the lung tissue has been done—damage which is evidenced afterwards by cicatricial tissue and pleural adhesions, and yet damage which eventually may give the patient no trouble if only that other factor (the tendency to further attacks) be kept well under control. Thus the most favourable result to be obtained in the second stage does not materially differ from that in the first stage.

In the third stage, however, the most favourable prognosis is by no means so good. The "result," as we have chosen to call this stage of bacillary action, is absolute destruction of lung tissue. The active process may be stopped, the progress of destruction may be limited, but the loss of lung tissue can never be made good. Not that this matters greatly, for we all of us have a great deal more lung tissue than we require for the ordinary purposes of life. When I gave up the out-patient department of the Brompton Hospital there was amongst my patients a woman who had attended me for more than seven years and at the hospital for some 15 years. She looked the picture of good health and had continued her attendance more for the sake of being observed than for aught else. I used frequently to ask the gentlemen who attended my clinique to guess her disease from her appearance and they always supposed that she must be one of the dyspeptics of whom, as in all hospital out-patient departments, we had a considerable number. Yet that woman's lungs were riddled with cavities. But a person who has lost any considerable portion of lung tissue is living without respiratory reserve and obviously an accidental bronchitis or pneumonia, such as we are all subject to, will be for him a much more serious matter than for one who has the whole of his lung area intact. Moreover, there are other conditions incident upon the presence of cavities which are dangerous, such as the accumulation and putrefaction of secretions and the formation of pulmonary aneurysms, with others of which more will be said. Thus the most favourable prognosis which we can make in the third stage must be vastly less favourable than that of either of the two preceding stages. In speaking of "a favourable prognosis" let us therefore consider always the limit to which the healing process can reach in the stage which we have diagnosed. Finally, if actual cure or arrest be beyond the powers of aided or unaided nature we may still estimate the probable rapidity of the disease process and consequently the duration of life and the comfort of the patient during such life as remains to him.

I propose to discuss the influence of all these matters and also of the antecedent conditions, and for convenience we will use the following headings—namely, the influence on prognosis (1) of the nature of the physical signs; (2) of the localisation of the physical signs; (3) of antecedent conditions; and (4) of individual symptoms.

Slight lack of resonance, with deficiency of breath sounds and of respiratory movement but without adventitious sounds, and these signs again limited to one apex, indicate a well-known physical condition, of which, however, we have no accurate post-mortem record. We believe, however, that the condition is one of slight collapse of the air vesicles due to a very early stage of catarrh. It is the most favourable state in which the tuberculosis can present itself and lends itself most readily to treatment and to perfect recovery. A further development of this condition causes still greater collapse of the lung and can be demonstrated by estimating, best by auscultatory percussion, the height of the apex posteriorly. The affected side can then be shown to be distinctly lower than the healthy side. Such a condition is naturally of somewhat less favourable prognosis, but frequently is recovered from. But the future of the case is much more doubtful if adventitious sounds in the form of râles are found, and not infrequently they can only be detected after cough. I think myself that the finer the râle the more favourable should be the prognosis, coarse and almost bubbling râles indicating a more intense and more advanced catarrh. Obviously, also, the greater the lack of percussion resonance the more unfavourable should be the opinion, but with one reservation—namely, in the condition of so-called "emphysematous phthisis," which will be mentioned below. The above include most of the signs met with in this stage. But their localisation is of extreme importance. Most frequently the signs are present at the apex of the lung. We hear at times of basic tuberculosis, but this is very rarely of primary origin. Out of 22,000 persons (of whom roughly speaking 19,000 were cases of pulmonary tuberculosis) who passed under my hands in the out-patient room of the Brompton Hospital, I found only some 60 cases which I could believe to have originated as a primary tuberculosis of the base of the lung. This rarity is unfortunate, for such an onset of the tuberculosis in my experience bears a fairly favourable prognosis, not only as to the probability of cure, but also as to slowness of course and the liability of infection of other portions of the lung. I speak here of primary tuberculosis of the base and not of tuberculosis grafted upon a previous unresolved pneumonia which will be considered later.

What I have said as to the rarity of basic tuberculosis may appear somewhat startling and other observers have rated its frequence more highly. But I draw my conclusion entirely from my own experience of the 22,000 cases mentioned. Since, as I say, this form of tuberculosis bears a favourable prognosis it is not out of place to consider how we can be certain of its presence. Without the greatest care we may assume that a lesion of the base is primary when it is really secondary to one of the apex. The lesion of the apex, although primary, may be very slightly marked—so slightly as to escape the examination of the most competent observer, while the basic and secondary lesion may be very active and well marked. But a secondary lesion of the base, as I will show hereafter when discussing the spread of tuberculous lesions, bears a very unfavourable prognosis, as indicating an advanced condition of the process. Now the position of a basic lesion at the upper part of the lower lobe or near the large branches of the bronchi should at once raise the suspicion that it is of secondary nature and should lead to a still more careful examination of the apices, for it is in this position that, by at least two of the methods of spread which I shall have to mention, such lesions occur. On the other hand, the more favourable primary basic lesion is generally situated in the lower parts of the lower lobe.

So far I have dealt with the position of a primary lesion in the upper and lower lobes respectively. But in the right lung we have a third lobe, the middle lobe, and occasionally it happens that this third lobe is in the left and not in the right lung. I need not here describe at length how one can define the limits of these lobes. Certain landmarks have at times been given for them, but they are very uncertain, and I have formerly demonstrated to another society and published elsewhere how the limits of the lobes can be located with the greatest accuracy by the method of auscultatory percussion. Roughly speaking, the middle lobe lies below the right nipple, but if a primary lesion be located below the left nipple I think it very desirable at once to determine by the method mentioned whether there is in that instance a middle lobe of the left lung; and here is my reason for mentioning this matter in connexion with prognosis. My colleague, Dr. Mitchell Bruce, once stated in a clinical lecture that he found that tuberculosis "beginning near the breast" was generally rapidly fatal, and with this I almost entirely agree. But I would further define the locality and say "beginning in the middle lobe," which, of course, would be most frequently on the right side. Tuberculosis may begin "near the breast" on the left side and yet not be in a misplaced middle lobe, but in the lower part of the upper lobe, and I have found, but of course only in a small number of cases, that the prognosis of such a lesion does not differ from that beginning in any other part of the upper lobe. But given that the primary lesion under discussion is really in a middle lobe, on whatever side it may be, then the prognosis is distinctly bad. Not that I would go so far as Dr. Mitchell Bruce and say that the tuberculosis is then generally rapidly fatal. Often it is, but when not rapidly fatal it is exceedingly resistant to treatment. This behaviour of the middle lobe is also marked in the case of secondary lesions, as I shall again mention in dealing with the spread of lesions in the second and third stages, and why it should be I cannot say. I surmise, however, seeing how obstinate also is œdema occurring in the same part, that it may be due to some anatomical or physiological difference in the blood-supply of this small lobe.

So far, we have discussed the prognosis of a simple and single tuberculous lesion in its first stage, and we must now consider the prognosis when there is more than one initial lesion, and we may at once decide generally that the more numerous the initial lesions the more unfavourable must be

the prognosis, and still further, that the more widely distributed such lesions the worse the prognosis, while multiple lesions limited to one lung will warrant a somewhat more favourable opinion than when both lungs are affected. But here again, as I have mentioned above, we must be careful not to confuse secondary with primary lesions, for bad as the presence of secondary lesions may be, it is not so bad as that of multiple primary lesions. I have already hinted at how localisation will help in this decision and that this will be more fully discussed in dealing with the later stages of the process. But I may here point out that a lesion of the extreme apex of the lung must be almost necessarily primary. Often both apices are affected at the same period or within a very short time of each other. But even when disease has progressed extensively and for some time in one lung, the apex of the other lung may be attacked by an initial lesion. It is true, as I will show in dealing with methods of spread, that it is just possible for a lesion of the apex to be produced by infection from some other part through the blood-vessels, though this is improbable, and even if it should occur, the effect is almost identical with that of the onset of an initial lesion.

The bad prognosis of multiple initial lesions has as its basis, not only the greater damage done to the lung tissue and the probability of still further damage in the future, but also, and this is probably of greater importance, the intensity of the tuberculous poison and the great vulnerability of the system which such multiple lesions indicate. The height of such intoxication and vulnerability is reached in two forms of onset of pulmonary tuberculosis which I will now mention. The first I do not remember to have ever seen described before, though I have met with it frequently, and I would venture to call it the multiple pleuritic onset. The patient after a short period of ill-health, accompanied usually by fever of some kind, comes under the notice of the doctor because his friends think that there is something wrong. Yet the patient cannot be persuaded of this. Nor does he complain of anything more than a vague languor and flying aches and pains which might be, and indeed often are, ascribed to rheumatism or neuralgia. Such patients have generally come before me because their condition was "queer" and no diagnosis of a positive kind could be arrived at. The state naturally requires a most careful examination of the patient and on making this one may find here and there in the chest a slight pleuritic rub. There seems to be no consolidation and no respiratory distress, but the symptoms are most significant of a powerful tuberculous attack and weak resistance, and, moreover, they indicate that the attack is widely spread. I know of no beginning which bears a more unfavourable prognosis. As a rule, in a short time patches of consolidation appear in the neighbourhood of the pleuritic areas, those patches soften and form small cavities, but still more important is the fact that intense, so-called "hectic," fever develops and the whole system collapses, giving way to other developments of the tuberculous process with a rapidly fatal ending.

The second most serious form of beginning is that which in its ordinary development has been described by Dr. Mitchell Bruce as "emphysematous phthisis." It is true that Jaccoud of Paris and also before him Stokes of Dublin described what I think was the same condition as the "suffocative form" of acute tuberculosis. At least, from the descriptions they give I think that this is so. But they did not recognise it as essentially a lung condition nor did they appear to find that it might pursue a somewhat more chronic course than that of, say, acute tuberculous meningitis or acute tuberculous peritonitis with which they classed it. But Dr. Mitchell Bruce has described accurately the whole disease. It is acute in its onset and course. The patient complains simply of cough, choking in character, great difficulty of breathing, and on physical examination nothing can be found but the ordinary signs of emphysema. The sputum is bronchitic, mucous or muco-purulent, yet if the physician be on his guard and further examines it, he will find the tubercle bacillus. The temperature may be normal, yet sometimes, fortunately for the physician, it is raised irregularly and this should cause a suspicion of the nature of the case. Further, and these are most important points, the patient wastes and becomes progressively weaker, his appetite fails, and none of the ordinary remedies for bronchitis and emphysema seem to have any good effect. So does the case go on for a short time until at last there come an outbreak of physical signs, patches of pneumonia, and afterwards of mal-resolution of the same, increased fever and weakness, and finally break-down of both lungs with its usual accompaniments and death. This is one of the most serious of beginnings for tuberculosis of the lungs.

And yet I must mention another which resembles each of the above in type and to which I hesitate to give any special name. Let me describe first what I think is not only its particular pathology but also that of all the preceding forms, since such a consideration will help us to a proper understanding and will, I think, fitly conclude this part of our subject. The amount of physical signs in any individual case indicates, not the intensity of the tuberculous poison by which the system is invaded, but rather the reaction of the tissues to such an invasion—the "chemiotaxis," as it is called by modern pathologists. The symptoms, on the other hand, are produced by the products of the invasion—to a certain extent, it is true, by the over-action of the body involved in the chemiotaxis—but to a greater extent by the poisonous action of the tubercle bacillus and its helping germs. By rule of thumb I have arrived at this conclusion which I put to you as being a useful guide: "If the symptoms are out of all proportion greater than the physical signs, think badly of the future of the patient." You will see the rationale of this. It means, looking at the matter as I have stated it above, that in such a case the action of the bacillus and its accompanying poison is in advance of the resisting power of the lung tissue. I admit that this idea of the pathology is not unopen to criticism and is, indeed, faulty. But I give it as a probable explanation of the facts which I will now describe. Not seldom one meets with cases in which for even a considerable period symptoms are very marked and so severe indeed as to keep the patient confined to bed for months. The temperature is raised regularly and irregularly and often, too, intermittently. Emaciation is continuous, appetite disappears, and weakness is extreme. There may be no cough, or such as may be present is so inconsiderable as to be almost overlooked, and so the case goes on, while no matter how carefully the physician examines he cannot find more than the most unimportant physical signs. Possibly there may be a little œdematous crackling at the borders of the lungs, an occasional bronchitic sibilus, even a few streaks of blood, which may be attributed to a congested throat—and these are all. Often I have known such a condition attributed to persistent influenza, not infrequently to subacute rheumatism, and sometimes to sheer neurotism. Yet I offer you a warning to beware of giving a favourable opinion of such cases. Time after time I have seen this apparent quiescence of lung disease give place to a furious outbreak of lung destruction and an early death. If I were to give a name to this type I would call it "latent pulmonary tuberculosis." The tuberculosis itself is active enough, but its pulmonary characteristic is latent and therefore differs from that of the pleuritic and emphysematous forms already mentioned.

Hitherto we have dealt with the indications for prognosis to be drawn from the character of the physical signs and the method of their presentation in the invasion stage of the disease. Let us now turn to a consideration of the conditions which precede the outbreak and which may possibly conduce to its occurrence. I cannot deal with all these, but I will discuss with you the more remarkable points which appear from an examination of the 22,000 cases which came under my charge in the out-patient room at Brompton.

Simple chlorosis is rarely an antecedent to tuberculosis, and, indeed, in general effects the two conditions are very different. Chlorosis is commonly accompanied by an accumulation of fat, tuberculosis by its diminution. This has been observed many times before now and must be well known to all of us. But I have carefully noticed the progress of an initial tuberculous lesion in pale and in florid patients respectively. Most of our patients are pale, but not infrequently one finds tuberculosis presenting itself in the most florid and apparently full-blooded subjects. In judging of this I try to make no mistake between the apparently full-blooded and those who, really anæmic, present the flushed cheeks and delicate complexion so often and rightly considered to be indicative of a tuberculous tendency. *Cæteris paribus*, I find that the florid subjects seem to behave worse in their resistance to the tuberculous invasion than do the anæmic subjects. They are certainly more prone to suffer from severe hæmoptysis, from recurrent destructive pneumonias, and from high fever. Again, they

are the more likely to present latency of the physical signs, which, as I have above pointed out, is of grave significance. On the other hand, the anæmic subjects much more commonly have shown a slow progress of the disease. Yet in estimating the prognosis one must think, too, of the effects of treatment in such cases, and certainly one finds that the florid patients, when once got hold of, are more amenable to the ordinary methods of treatment than are the anæmic ones. To summarise the above remarks I would say that, viewing the much larger number of anæmic than of florid patients who are attacked by pulmonary tuberculosis, the percentage of cures and of slow progress of this disease is very much greater in the anæmic than in the florid. Given that a florid person is really attacked by pulmonary tuberculosis and that this is decided by perfect observation, the prognosis of his case is on the whole more serious than is that of an anæmic person similarly attacked. An explanation of this may be found in a remark of Sir William Broadbent in his book on "The Pulse," that such florid patients are generally the subjects of vaso-motor atony.

Deformity of the chest undoubtedly predisposes to tuberculosis of the lungs, and this, too, whether the deformity be due to simple scoliosis or to kyphosis from pre-existent tuberculosis of the vertebræ. From whatever cause the deformity results, it greatly increases the gravity of the prognosis when once tuberculosis of the lungs has established itself. This has an obvious explanation. The deformity interferes with respiratory movement and hence with the circulation of blood through the lungs. The tubercle bacillus has then a better chance of attacking the lung tissue without the protection of the tissue by a free flow of nutrient blood. The result is almost invariably, as I have found, a rapid destruction of lung tissue and also an even more rapid decrease of the body powers consequent upon the general feeble vitality. The prognosis is bad. Such deformity of the chest is often, as I have mentioned, due to an actual tuberculous disease of the vertebræ, and this leads one naturally to the consideration of other pre-existent tuberculous affections, and especially to the prognosis of tuberculosis of the lungs following and accompanied by tuberculosis of the lymphatic glands. Before the nature of the pathological process in such glands was accurately known the condition was described as the scrofulous diathesis, and undoubtedly the patients who suffer from it constitute a group differing greatly in many points from those whose lungs are affected at the beginning of their disorder. What is the essential difference between these two rough groups I do not know, but that there is such difference I am well aware of. The danger to a patient of possessing such tuberculous glands is certain. Nevertheless, judging from my own experience, I must say that the progress of a pulmonary tuberculosis secondary to a pre-existent glandular affection is much slower and consequently more favourable than when the lung tissue is primarily invaded. The glands, we know, form a resting-place for the tuberculous poison, a resting-place fairly well cut off from the rest of the body by hardened inflamed tissue, and, still more important for the purpose of prognosis, a resting-place which can often be easily removed together with its contained poison. The surgeons now deal freely with such glands, and absolute ablation is the best remedy for them. The possibility of this greatly increases the probability of cure of any lung affection which may accompany them. They can also be removed by other means, but, to trench upon the subject of my later lectures, let me at once say that nothing can be worse for the future of the patient than the so-called dispersal of such glands by painting with iodine or rubbing with iodide liniments. The glands then may disappear, it is true, but very frequently only to spread their contained poison elsewhere in the body and to increase any lung trouble which may exist. I shall eventually have to mention how such glands can safely be dispersed, and in a marvellous manner, by the administration of nuclein by the mouth, and then without such bad effects as I have mentioned. But the presence of such glands seems to me to be, on the whole, a favourable element in the prognosis of a tuberculous lung affection in that they can be usually easily removed, that their removal takes away an important focus of tuberculous poison and leaves the lung tissue unhampered in its efforts to fight the bacillus, and, lastly, that the diathesis, if we must call it so, which is displayed by such lymphatic tuberculosis, is generally combined with a similarly slow process of tuberculosis in the lungs.

Time will not allow me to do more than merely hint at the influence of the presence of lymphadenomatous glands and also of lymphadenomatous and malignant disease of other structures upon the progress of a tuberculous disease of the lungs. Suffice it to say that the combination is uncommon and the gravity of the more or less malignant disease entirely overshadows that of the tuberculosis. The connexion of the two series of disorders, uncommon as it is, is extremely interesting, and the out-patient department and also the post-mortem room at Brompton Hospital have given me matter which might well be discussed, but almost entirely from the pathological and not from the clinical standpoint. Again, too, I will not deal here with the co-occurrence of cardiac disease and tuberculosis of the lungs, or their mutual affection of the prognosis, for this has been treated very fully by others.

But amongst the most important disorders (from the prognostic point of view) which may precede an outbreak of tuberculosis of the lungs are pleurisy, serous or purulent, and pneumonia. I have already mentioned how serious is the outlook when pulmonary tuberculosis first shows itself by the presence of scattered patches of pleurisy. I do not wish to refer here to this particular form of outbreak, but to those cases in which a pleurisy, generally with effusion, precedes the onset of the tuberculosis. It is, nevertheless, remarkable how often, judging from the results of many observers, an apparently simple pleurisy with effusion is really tuberculous in nature, as evidenced by the finding of tubercle bacilli in the exuded fluid. Yet we know very well how comparatively seldom such a pleurisy with effusion is followed by more general pulmonary tuberculosis, and I would especially call your attention to this fact as giving ground for the belief that simple pleurisy with effusion need not necessarily bear with it a bad prognosis for a tuberculous subject. Undoubtedly, a pleural effusion, not previously ascertained to be tuberculous, is in some instances followed by an outbreak of tuberculosis in the apex of the lung of the same side, and probably this is due to malnutrition of the lung consequent upon its disordered circulation. But from actual observation I can say that such outbreaks of tuberculosis are rarely so serious in their actual attack or in their further progress as those which have not been preceded by such an effusion. Again, departing somewhat from our order of discussion, I will mention here that the occurrence of pleural effusion in the course of a pulmonary tuberculosis, and especially in the stage of invasion, seems to be actually of benefit if only that effusion be not removed. It is well known at the Brompton Hospital that a simple pleural effusion in a tuberculous patient is best left alone if it does not seem to be unduly hampering the respiratory apparatus, and a probable explanation of this fact I will give under the head of Treatment.

When the pleuritic fluid is not serous but purulent, when, in fact, an empyema has occurred and has been removed by operation, it is again remarkable how seldom this is followed by pulmonary tuberculosis if we take account of the large number of cases of empyema which come under treatment and are permanently cured. Yet when tuberculosis does break out after empyema its course is usually rapidly fatal, a result which one might expect from the fact that the original empyema is itself the result of a very low vitality, and this will of course have its due influence upon a following tuberculosis.

Pneumonia is an essential element of pulmonary tuberculous outbreaks, and, indeed, gives rise to nearly all the physical signs from which we form our diagnosis. But we at this point must deal with pneumonia as a precedent of the outbreak—a pneumonia not of itself tuberculous, but occurring in a person predisposed to tuberculosis. I am not much afraid of a tuberculosis of the lung which follows upon an ordinary croupous pneumonia. But I must be careful here to make myself perfectly understood. I am speaking of the prognosis of the tuberculosis and not of that of the pneumonia. Naturally, tuberculosis is a danger to a person who is suffering from croupous pneumonia and its possible outbreak greatly increases the gravity of the prognosis of the pneumonia. But I think the previous existence of a simple croupous pneumonia does not materially affect the prognosis of a consequent tuberculosis. Most croupous pneumonias affect the base of the lung and tuberculosis consequent to them is, as I have already stated, not only rare, but slow in progress. Pneumonia affecting the apex of the lung, beginning in the ordinary turbulent way of the croupous

affection and not initially tuberculous, if it does not cause immediate death, is generally followed by complete resolution of the lung, and, indeed, more frequently and completely than the same affection of the base. The pneumonias of the base which are followed by tuberculosis of the same part are much more frequently found in children, and for this reason, too, the prognosis is the more favourable.

I would say a few words about tuberculosis of the urinary organs followed by tuberculosis of the lungs. It is curious that urinary tuberculosis, beginning as such, should remain for so long a time—and this is a fact in its history—located to the urinary organs alone. This seems to be the case, no matter where such urinary tuberculosis first shows itself, whether in the kidney, the ureter, the bladder, the urethra, or the vesiculæ seminales. Probably, it seems to me, the reason can be found in the fact that the urinary organs are mostly developed from a different embryonic layer than are the lungs and most other of the internal organs. Yet towards the end of such cases one does meet with pulmonary tuberculosis. Invariably, I have found that the lung trouble plays only a very minor part in causing the end of the patient—the pulmonary tuberculosis, as such, bears a favourable prognosis. Unfortunately, this is of not much benefit to the patient, for by the time the lung trouble has developed his condition is otherwise hopeless.

My out-patient records afford some evidence too of the effect on prognosis of previous tuberculous disease of the lungs in the same family, though let me say that I inquired only into the history of father, mother, brothers, and sisters. Incidentally they indicate how rarely such tuberculous family history could be obtained if we take into account the large number of tuberculous cases included in the records. This supports the view held by modern hygienists that heredity does not play so important a rôle in the causation of tuberculosis as does actual infection. Yet the influence of such hereditary tendency can by no means be ignored, for I find that whenever present it very seriously affected the gravity of the case.

Another point, too, which crops up in the examination of this long series of cases is that but few of the patients affected by tuberculosis led open-air lives, and although I cannot actually bring statistics forward to prove this point, yet it was my impression that those exposed to inclemencies of weather, such as navvies, bricklayers, and so on, did far better than did those who had the opportunity for keeping indoors. I lay, however, but little stress upon this observation, for obviously such as had those occupations were the more robust of the patients. And in contradiction to the apparent conclusion let me say that a certain number of my patients were Polish Jew tailors from the East-end, nearly all of them in a terrible condition of poverty and dirt, and living, as we know, with the most frightful unhygienic surroundings. Only few of these had tuberculous affections, but they suffered greatly from bronchitic and other catarrhs.

A Clinical Lecture

ON

THE TREATMENT OF CERTAIN CHRONIC ABSCESSES BY SIMPLE ASPIRATION.

Delivered at St. George's Hospital on June 19th, 1900,

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GENTLEMEN,—In advanced days like the present a surgeon who deliberately recommends the use of a treatment which is commonly considered old-fashioned or out of date necessarily places himself in a somewhat dangerous position, since he is liable to be thought either to have lost touch with the spirit of the times or to lack energy and resource to keep abreast with the progress of recent affairs. For my own part, however, I am sure that with an audience like the present, well acquainted with my ordinary practice, I run no risk on this account, and if I run any such risk with others less familiar with me I am content to accept it, because I believe it is only by the record of long personal experience that the value of any treatment, whether new or old, can be properly estimated. Further, it must be remembered that some old-fashioned methods in surgery which failed to achieve ends which would now be considered good, under our present system of cleanliness effect results which, if not ideal, are at least extremely satisfactory. My purpose to-day, then, is to call your attention to one of these old-fashioned methods—viz., the treatment of certain chronic tuberculous abscesses by simple aspiration.

Thirty years ago or thereabouts the aspiration of abscesses was a very common method of treatment. At that time the antiseptic system, although spoken of, had not come into vogue and the practice which we now adopt of immediately treating almost every abscess which comes under observation by free incision did not hold good, because treatment in that way was generally followed, at all events in large abscesses, by extremely high reactionary fever, septicæmia, or pyæmia, so that no prudent surgeon as a general routine would have adopted the treatment. Hence it came about, especially in psoas abscess and in abscesses about the hip-joint in connexion with tuberculous disease, that the alternatives presenting themselves to the majority of surgeons at that time were aspiration, opening by a small incision, or allowing the abscess to burst. To those of you who do not know the state of surgical treatment in those times it may sound strange to hear that patients with abscesses about the hip, with psoas abscess, or with large collections of pus in other parts would sometimes be allowed to lie in bed for months waiting for the abscesses to burst. Finally, during some night or day (it was generally at night) the abscess would burst and the bed and the patient would be flooded with pus. That was not an uncommon treatment by some surgeons of such chronic abscesses connected with bone disease, especially of the hip and spine. Mr. (afterwards Sir) Prescott Hewitt, who was then senior surgeon to St. George's Hospital, had quite a reputation in the treatment of abscesses of this kind. He almost invariably allowed them to burst and, speaking generally, his cases progressed more favourably than was the average at that time. I have said that the reason that these abscesses were allowed to burst was that if they were incised severe septic fever nearly always followed, the majority of patients dying ultimately from "hectic fever," or from some other form of blood-poisoning the result of septic absorption. It was supposed that the patients in whom the abscesses were incised did so badly because the fresh cut surfaces made by the knife afforded an easy means of entry for the poison into the blood. It was said, on the other hand, that if the abscess was allowed to burst the vessels, mainly the veins, by which the poison entered the blood were sealed in the process and so blood-poisoning was less likely to occur. By many surgeons, therefore, these abscesses were allowed to burst, and those which burst certainly, as a rule, did better than those which were opened. This method was, however, always a very unpleasant and frequently an unsatisfactory one. In consequence aspiration—i.e., the emptying of these abscesses by successive tappings with the aspirator—became a common practice. The aspirator in its present form is not a very ancient instrument—indeed, it was first brought into use at this hospital about the time when I was house surgeon, from 1874 to 1875. Before that time the aspirator as you now see it was practically unknown. At that period, although it was before the antiseptic era, surgeons had learned to realise the fact that if a cavity in the body containing fluid could be emptied without admitting external air the results were generally better than when the external air entered the cavity; in other words that a large number of abscesses which were treated by aspiration, even if they were not cured, became by degrees very much smaller without any constitutional disturbance; so that an abscess (psoas, for example) which originally might have contained a couple of quarts of pus would dwindle down, after successive aspirations, until it was hardly perceptible. Hence aspiration was not only useful because it sometimes led to the complete cure of an abscess, but also because, failing a cure, it was obviously more satisfactory to open an abscess containing a very small amount than one containing several quarts of fluid. Unfortunately, however, these good results were not the rule, for it was frequently found that "suppurative fever" followed aspiration, necessitating the free opening of the abscess—a treatment which more commonly than not in large abscesses, like those associated with disease of the spine or hip, finally ended in death from pyæmia or septicæmia. That this should have been so is not remarkable, as no adequate cleansing of instruments at that time was used.

I have, indeed, seen the aspirator needle taken from one abscess and almost directly, without a more thorough cleansing than a dip in cold water and a rub with a towel, plunged into another patient. In spite of these results, however, the aspirator was then looked upon by many surgeons as better than the knife.

In these days of well-understood surgical cleanliness there is, of course, no reason why the introduction of a properly sterilised needle or trocar into an abscess should be followed by any harm at all. Speaking generally, there is no doubt that the best treatment for chronic tuberculous abscesses is free incision and scraping followed by immediate suturing of the wound, or drainage, as the case may be; but it is extremely difficult to insist with safety upon the use of a routine method of this kind under all circumstances, and there is, I fancy, hardly a single well-tried routine method which is not sometimes amenable to modification with advantage. I think that if you consider for a moment the position of some practitioners and the conditions in which they have to practise their profession you will see that it cannot always be to the advantage of the patient or of the practitioner that chronic abscesses of large size—say, for example, of the thigh—requiring an incision of perhaps six or eight inches in length, in order that their contents may be thoroughly scraped away, should be dealt with in this manner. Conceive yourselves for a moment in the position of a practitioner working amongst poor people setting about a case of this kind in squalid insanitary surroundings with inadequate means for obtaining asepsis and all the difficulties with regard to dressings and time which must frequently arise under such circumstances. A moment's reflection will show that, however safe the radical treatment may be with those who have all the appliances and advantages which a great hospital like this provides, it cannot be undertaken with anything like the same chances of success by practitioners working under the condition just indicated. To such the aspirator is an instrument of the greatest value. The following cases will serve to illustrate the occasional advantages of this method of treatment.

CASE 1.—There is now a female patient in the Wellington Ward of this hospital, aged 26 or 27 years, whom I have treated in the way I have described. Some years ago she suffered from acute hip disease of tuberculous origin; ankylosis followed upon the usual treatment, and, the limb being in a good position, she could walk well, but of course she limped considerably. Unfortunately, she was not content with her condition. She resented the stiffness of the hip and longed for some power of movement in it. She therefore sought advice with a view to getting the movement which she so much desired. The result was, it appears, that an anæsthetic was given to the patient and the joint was freely broken down. The effect of that procedure was to give her some mobility for the time being which, of course, pleased her much. But the effect, also, after a little time, led to the formation of an abscess round the hip—a "quiet" abscess, which caused little pain but rapidly increased in size. On her admission she was in a very delicate state; she was feeble and very nervous and excitable. The temperature was normal and there was little, if any, pain. Over the left hip joint was an abscess which extended from the anterior superior spine of the ilium downwards to within three and a half inches of the knee, involving about one-half the circumference of the thigh. Some treatment was urgently called for and the question arose as to the best method to pursue. As I have already said, the patient was very delicate. The abscess was very large, but there was no high temperature or anything to show that there was acute inflammation proceeding, but there was this growing collection of fluid. The ordinary treatment would obviously have been to lay the abscess open from end to end and to scrape it freely out, but this would have necessitated an incision from the anterior superior spine of the ilium to within about four inches, or at all events to within five inches, of the knee-joint—a very extensive operation for a patient in her condition. There came, therefore, the question whether there was any milder plan which could be adopted, at all events temporarily—some treatment which would not at the time subject her to the same danger as would be run in the very free laying open and scraping of this great cavity. Here, it seemed to me, was an opportunity to try the alternative which I mentioned just now—namely, aspiration. I can well imagine some of my more energetic juniors thinking it hardly conceivable that any up-to-date or possibly even any competent surgeon could recommend such a proceeding in the present day. Nevertheless my experience told me that its trial in this case was right and so we adopted it. What has been the result? I tapped the abscess with the aspirator, and on the first occasion we drew off a very large quantity of fluid which was allowed to flow freely until it had become slightly blood-stained, when the trocar was withdrawn, the small opening made by it being sealed with collodion. After the withdrawal of this fluid there was very little evidence of the existence of the abscess at all, except that the side of the thigh was flabby and somewhat puffy. The sense of fluctuation and all the other signs of an abscess had disappeared. In the course of a fortnight the abscess had filled again to half its former capacity. It was tapped again, and this time very much less fluid was drawn away. We tapped it a third time and, later, a fourth time, at intervals of 10 days and a fortnight. After the fourth aspiration no fluid could be got to flow through the cannula and there remained a doughy tumour on the outer side of the thigh not more than a quarter of the size of the original abscess. I concluded therefore that in the course of our tappings we had withdrawn practically the whole fluid contents of the abscess. What was left was granulation and fibrous tissue around the abscess cavity. Having got to this stage I have no doubt that if we could have afforded to keep the patient in the hospital long enough, and if she had been content to wait, the process of inspissation would have taken place, and that in all probability the abscess would have dried up altogether without any further interference from the surgical point of view. Time, however, especially in these hospital cases, is of value, and as I thought that we could now deal with the abscess through an opening about one-third of the size of that which would have been required in the first instance I laid the cavity open by this comparatively small incision and cleared out what was left of the abscess contents. Upon opening the cavity there was a little oily fluid, but very little, and in fact the whole operation was more like the removal of a soft solid tumour than like dealing with an abscess. The cavity had contracted down to a great extent until it was less than one-third of its original size when the patient was admitted to the hospital.

As you have without doubt noticed, this is not a case which illustrates the *cure* of an abscess by aspiration, and on this account I have taken it as my first illustrative case because it shows very well how, under certain circumstances, if you choose to use this treatment discreetly the radical operation may be reduced from a measure of great severity to one of comparative slightness, a very important matter to a patient in the condition of this woman.

The following is an instance showing how a complete cure is sometimes brought about by this treatment.

CASE 2.—The patient was a very busy man, who was not only much occupied at home but was constantly travelling over all parts of Europe on affairs of business. He had hip disease when he was a boy. He is now approaching 50 years of age. The hip disease was followed by firm fibrous ankylosis in a position which at first was not good. The faulty position was, however, rectified later by tenotomy (about 22 years ago). I remember the details of his case well, because I gave the anæsthetic at the time of the performance of the operation. I saw nothing of the patient after this until about a year ago; there was therefore an interval of more than 20 years between the time when I gave him the anæsthetic and the time of my seeing him the other day. He had been perfectly well in the meantime but about a year ago he began to feel a little discontented because he felt a band at the inner aspect of the hip which seemed to drag a little at times. Being a man of a mechanical turn of mind he naturally argued that if that band were divided he would be very much more comfortable, and, further, he thought that he would get a little more movement in the hip, so he came to me with a view of having this band divided. (In passing, I would ask you to bear in mind what happened to the patient whose case I have just described. She was not content with the position of her limb, and although she had a perfectly sound stiff hip she wanted movement. The hip was broken down and freer movement followed for a time—at the cost, however, of the development of the large abscess on account of which she came to the hospital. Now, if there is one thing more important than any other which you must bear in mind in all cases of tuberculous disease affecting joints, I do not care what the joint is, it is this: ankylosis having become firm, although all signs of active disease may have been gone for years, it is a

dangerous thing, speaking generally, to attempt to get a moveable joint in such cases by breaking down or otherwise interfering with the actual line of union. In almost all tuberculous cases which heal in this way there is left a certain amount of what may be called latent tubercle; I mean little caseating masses which, if they are disturbed, will, as often as not, lead to the lighting up of fresh disease, ending in the formation of these abscesses which are so frequently seen in tuberculous joints which are interfered with in this fashion. There is no condition, I suppose, to which the old motto, "Let sleeping dogs lie," applies with more force than "quiet" or "cured" tubercle. Never disturb quiescent tubercle if you can help it. An excellent warning of the same kind has occurred in this hospital in the case of a boy on whom I operated to-day for tuberculous peritonitis. He came to the hospital some few weeks since with inguinal hernia which required operation. At the time of the operation upon the hernia a caseous mass was revealed in the cord adherent to the back of the sac. As a matter of necessity the mass had to be removed. It was latent caseating tubercle—"cured" tubercle, in fact. Although the little fellow was perfectly well previously in general health as far as he knew and as far as we could see, except that he had rather a large abdomen, almost before the wound of his hernia had healed he developed rapid tuberculous peritonitis. My belief is that if the latent nodule of tubercle in this case could have been left without interference at the operation I should not have had to operate on the boy this morning for tuberculous peritonitis. The stirring up of the quiet focus started a fresh tuberculous invasion. I mention this case with the other because it shows so well the danger of disturbing quiet tuberculous conditions.) Returning to the case of the patient whom I was describing you will remember that the tense band of which he complained was a source of great annoyance to him; nevertheless, nothing would induce me to interfere with it because of the danger which I believed would be run in the proceeding of lighting up anew quiescent disease. Moreover, I was by no means sure that the recent sense of irritation was not already due to a recrudescence of the old disease in a small way. This suspicion of mine was subsequently justified, for about eight months afterwards the patient came to me again, rather satisfied with his condition because he found that he had a little more movement than before. He stated that he had been "working away at the band" as much as he could, and he demonstrated with some satisfaction the progress which he had made towards increasing the movement at the hip. "In addition to this," he said, "the muscles about the outer side of the hip are really getting quite full and hard." I examined the parts: there was certainly a little more movement at the hip, but the "hard muscles" thought to be felt were in reality the swelling of an abscess. In fact, a large abscess had developed which was so quiet in its progress that the patient was unconscious of its formation. It extended completely across the thigh just below the hip, so that percussion on the outer side of the thigh conveyed a distinct sense of fluctuation to the finger placed on the inner side. It was most important in this instance that the patient should not be laid up. I gave him my opinion of the case, at which he was naturally disheartened. I also told him what the ordinary treatment would be. Under the circumstances in which he was placed, which were such as to make laying up at that time almost impossible, although it was plain that something must be done, it was at the same time manifest that to open an abscess containing at least a pint or a pint and a half of pus, the patient at the same time being able to continue his occupation, was quite out of the question. I therefore treated the abscess by aspiration. At the first tapping one and a half pints of pus were drawn off. A fortnight later, the abscess having re-filled to half its former size I tapped again. At various intervals I emptied the abscess five times, never allowing it to attain more than half the size which it had reached at the previous tapping; at the last tapping only three or four drachms of pus could be withdrawn. That is now some seven weeks ago. There has been no reappearance of the abscess, the patient is absolutely well, and at the present time there is not the least indication of an abscess having existed. The treatment, extending over about three months, was carried out without interrupting his work for a day. There is no other plan which, so far as I know, could produce such a result with so little inconvenience and trouble to the patient.

CASE 3.—The patient, a female, 27 years of age, noticed a gradual enlargement of the left hip for which she could not account. No injury had been received and she was, so far as she knew, in perfect health. The enlargement by degrees assumed the character of a distinct tumour about which she did not much concern herself until an aching pain was habitually felt after a long day of standing or other exertion. As this pain increased steadily she sought advice. Upon examination she appeared to be a strong and healthy young woman. The left hip was enlarged; above and around the trochanteric region there was a well-marked tumour which upon inspection only was suggestive of a lipoma. Upon palpation, however, fluctuation was easily detected and the condition was obviously a chronic abscess. The hip-joint was healthy and no cause for the disease was apparent. The usual treatment by free incision was advised, but to this she would not consent until all other plans had failed, as the laying up which would have been necessary was, under the circumstances in which she was placed, a very serious matter. I therefore thought it worth while to try the aspiration treatment. At the first tapping about two pints of laudable pus were removed. In a fortnight, the abscess having become again half full, it was emptied; ten days later a third aspiration was made; and three weeks after this a final tapping removed about three ounces of pus. No further accumulation occurred and two months later nothing abnormal beyond a slight induration above the trochanter could be detected. When last heard of, eight months after the first tapping, the patient was perfectly well in all respects. Although I could quote other instances, several being cases of psoas abscess, which have been cured by aspiration in the manner which I have described those already mentioned are, I think, sufficient by way of illustration.

I have no desire that you should for one moment suppose that I recommend the adoption of aspiration as a routine method in cases like those described, or that in a general way I think it should supplant other more radical plans. All I wish you to understand is that certain cases of large chronic tuberculous abscesses can be cured in this way, and some, although a cure may not follow the method, may be so modified that the operation finally necessary for their treatment becomes comparatively slight. In abscesses arising from tuberculous disease of lymphatic glands aspiration is not to be recommended under any circumstances, judging, at least, from my own experience, for although I have in this way cured abscesses connected with tuberculous bone disease, &c., I have never, to the best of my belief, effected a cure by the method in lymphatic gland disease. With regard to the details of the treatment there is little to be said. Absolute surgical cleanliness must, of course, be observed in the preparation of the part to be operated upon and in the condition of the instruments. After this the essential points are (1) to be careful to cease to withdraw the abscess contents the moment any sign of blood shows itself in them; and (2) not to allow the abscess to regain more than half its former size before aspirating again. This applies not only to the original tapping but also to the recurrent ones. The more slowly the fluid is withdrawn the better.

It may, perhaps, be new to some of you to hear that very large abscesses, especially of the "psoas" kind, sometimes disappear spontaneously. In these days it is unlikely that you may have the chance of seeing any case of the sort, but in former times, when patients suffering from psoas and other large chronic tuberculous abscesses were kept lying on their backs for many weeks or months without any active measures being taken, it was not regarded as a remarkable thing for an abscess to dry up ("inspissate" was the term used) and disappear. Four or five years ago I had a patient in the Grosvenor Ward in this hospital in whom a large psoas abscess, just as we were about to open it, commenced to diminish and finally disappeared. I have already mentioned this case when lecturing. The patient was a man with a well-marked angular curvature; he is, I believe, at the present time following his occupation. This is the most recent case which has come under my immediate observation. I have, however, a vivid recollection of a case of psoas abscess occurring in the practice of a late colleague of mine in which radical interference was strongly urged but declined by the patient's friends, in spite of the gloomy possibilities which were held out for their contemplation if matters were allowed to take their course. The case, however, although tedious, proved uneventful, for in the course

of six months gradual diminution, and finally entire disappearance of the abscess, followed—a result which was claimed as a supreme triumph for domestic surgery. It may be pardonable to remind you that the spontaneous disappearance of abscesses is brought about by the gradual absorption of the fluid contents leading to inspissation; the treatment by aspiration imitates this sometimes natural process and is therefore based upon perfectly rational grounds.

You have without doubt noticed that I have spoken only of simple aspiration without the injection of iodoform or any other germicide. In the commonly used text-books and in other places will be found recommendations, sometimes very strong, for the use of iodoform injections, mainly in the form of emulsion, in all tuberculous abscesses. A fair trial of the drug in this relation led me some time since to the conclusion that no obvious advantage arises from its use. Indeed, I am one of those who rarely use iodoform for any purpose. In operative work I never use it—a fact which is familiar to those who have seen anything of my practice. It may, indeed, be known to some of you that my first admonitions to a house surgeon coming freshly to my work are that he shall be careful about absolute cleanliness and that the use of iodoform shall not be a routine treatment with him. For my own part, I feel bound to say that although I have seen harm come from the use of the drug I have never seen it effect any advantage worthy of mention in operations in any part of the body. In certain stinking or phagedænic sores of a venereal sort it may at times be used with benefit, but in operative work properly conducted it is, in my belief, valueless. On the other hand, I have seen undoubted instances of poisoning from it, and I have seen cases in which, to the best of my judgment, grave complications have arisen solely in consequence of the employment of iodoform. The indiscriminate use of the drug has without doubt vastly diminished of late, but even now by some surgeons, operations, however clean, are rarely completed without its application. For example, the wound in the abdomen after the removal of an appendix during the quiet stage is by some filled with iodoform; the wound resulting from the removal of a breast is frequently freely dusted with it; and I have actually seen the drug freely sprinkled over the parts after an operation for hare-lip. Personally I find it difficult to understand why a drug the germicidal qualities of which cannot be trusted until it has been sterilised in order to kill its own peculiar micro-organisms should be accorded a respect which with some of us exalts it almost to the position of a fetish. Of the evil effects of the drug I could give you sufficient examples were not the matter beyond the scope of the present lecture.

Returning to the main subject which is before us, let me repeat that I wish it to be distinctly understood that I have no desire to advocate the indiscriminate use of aspiration in chronic abscess to the exclusion of the more scientific treatment by free incision and scraping. All that I am anxious to do is to point out that aspiration, in the manner which I have indicated, offers a means of dealing with certain chronic abscesses, especially of the "residual" kind, which can be with safety carried out when the treatment by incision and scraping from the circumstances of the patient, and possibly of the practitioner, is extremely undesirable, if not actually dangerous; and further, that in many cases the aspiration treatment can be adopted without interfering with the patient's ordinary vocation for a single day—an advantage the importance of which in some cases can hardly be over-rated. It is, moreover, a method which offers but trifling difficulty in the matter of sterilisation and needs no complicated dressings or other troublesome details—facts which to those who have to practise, as some of you may have to do, in circumstances of difficulty in the matter of antiseptics and of hygiene, must be of great moment. In this respect it may not be amiss to remind you that it is impossible for all of us, much as we may desire to do so, to practise amongst the wealthy and in the advantageous conditions which can be afforded by riches, or to have at hand the means which are available in a great general hospital like this. To those whose practice lies in the less advantageous circumstances I can with confidence recommend the method as one which, although it may be "old-fashioned," may be used with safety when more radical means are so difficult as to be almost impossible with due regard to the patient's welfare; and further, I am sure, no matter what the facilities of the practitioner may be, that there are many cases of the kind of which I have been speaking in which the use of the aspirator with discrimination may prove of incalculable advantage.

ON A METHOD OF MEASURING THE BACTERICIDAL POWER OF THE BLOOD FOR CLINICAL AND EXPERIMENTAL USES.

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WHATEVER may be the exact rôle played by the bactericidal substances of the blood and lymph in connexion with the destruction of bacteria in the animal organism there can be no doubt as to the important influence which these substances must exert. The quantitative study of the variations in the bactericidal power may therefore serve quite well to elucidate many pressing questions. In the first place, it may furnish valuable data upon which to base a diagnosis and prognosis in cases of specific fever. Again, the quantitative study of the alterations in the bactericidal power of blood which are produced by the addition to that blood (*in vitro* or *in vivo*) of a particular "therapeutic serum" may quite well yield important information with regard to the utility or otherwise of the particular "remedial agent" in question. Furthermore, in the case of animals inoculated with particular bacterial vaccines, a comparison of the bactericidal power of their blood subsequent to inoculation with the bactericidal power of the blood anterior to inoculation may quite well afford valuable indications as to the presence or otherwise in the bacterial vaccines in question of the immunising substances which are desired. Again, quantitative estimations of the bactericidal powers of the blood of normal persons and of persons who have been inoculated with bacterial vaccines may quite well furnish important indications, in the first case as to the expediency of inoculation, and in the latter case as to the successful issue, or otherwise, of the inoculation. Lastly, by means of quantitative estimations of bactericidal power many theoretically important questions may be resolved. Among these may be mentioned the question as to the co-existence and interrelation between the agglutinating and bactericidal powers of the blood. Without in any way undervaluing the important results already obtained by the initiating work of Buchner, it will be manifest that the investigation of most of these questions has hardly as yet been entered upon. It has been retarded by the fact that the technical methods which have been hitherto employed have necessitated the employment of relatively considerable quantities of blood, and have, in the case of agglutinating bloods, been associated with a serious source of fallacy, arising from the fact that the bacteria, which would normally be separately disposed, are under the influence of such bloods agglutinated together, with the result that the individual colonies which develop on the nutrient medium may be the outcome, not of a single surviving bacillus, but of a whole group of surviving bacilli. By means of the technique described below the sources of difficulty and error, which have been referred to above, can be effectually and, it seems to me, easily disposed of. The method is also a comparatively rapid one, it being possible, after practice has been acquired, to carry out about four quantitative determinations in the hour.

The principle of the method.—With a view of determining in a quantitative manner the bactericidal power of the blood measured volumes of serum and of graduated dilutions of serum are introduced into a series of "capillary cultivation tubes," along with a series of equal volumes of a gelatin culture containing an appropriate number of bacteria. Mixture of the contents of the serum and culture is then effected in the capillary tube. It will be noticed that by this arrangement the serum comes in contact with the bacteria only after these have been suspended in a fluid which is sufficiently viscid to make it impossible for them to come together into groups. After the gelatin has solidified the tubes are incubated for a period of two or more days. The number of colonies of the specific organism which develop is then elicited by counting under a microscope, the results of the enumeration being in each case compared with the results of the enumeration of the colonies in a series of control tubes filled with an equal volume of the gelatin culture duly diluted with an indifferent diluting fluid.

It will be convenient to begin the description of

procedure by considering how the desired dilutions of the blood are made and the desired quantities of bacterial culture and serum are measured out. For these purposes it is convenient to make, as can readily be done by the following method, an accurately graduated capillary pipette.

Method adopted for dividing an ordinary capillary glass tube so as to make a graduated capillary pipette.—A piece of ordinary glass tubing of about a quarter of an inch (roughly 0·6 centimetre) in diameter is drawn out in the middle into a capillary tube of an approximate diameter of from $\frac{1}{40}$th to $\frac{1}{100}$th of an inch (from 0·4 to 0·25 millimetre). Before the glass has quite cooled the capillary end of the tube is bent round so as to make a right angle with the wider portion of the tube. This done a stout glass capillary pipette, such as the five cubic millimetre pipette, which is supplied with Gowers's hæmocytometer, is taken and filled in up to the calibration mark with a solution of eosin or other coloured fluid. The extremity of the ungraduated thin-walled capillary tube which is to be calibrated is now broken off and the tip of the stout glass capillary pipette is brought into apposition with the broken end, this last being during the operation held vertically upwards. By gentle blowing the measured volume of coloured fluid is now transferred to the ungraduated thin-walled capillary tube. The transference of the coloured fluid in an unbroken column can be effected without difficulty provided that the end of the thin-walled capillary tube has been broken off in an accurately transverse direction, so as to make it impossible for bubbles of air to be sucked into the orifice.

When the measured volume has been transferred without loss and in unbroken column into the capillary tube, the point of this latter is held downwards in such a manner as to allow the fluid to flow back to the point. A mark with a coloured wax pencil is then placed on the capillary stem to indicate the upper limit now attained by the coloured fluid. After the first division has been thus placed upon the tube the further calibration is undertaken in the following way. The point of the tube is again raised in such a manner as to allow the column of fluid to run back from the point until the distal end of the column of fluid corresponds with the division mark which has been placed on the tube. The point where the second division is to be placed on the tube is now manifestly indicated by the proximal end of the column of coloured fluid. Two divisions having been placed on the tube with a view to obviate, so far as possible, a progressive loss of fluid by adhesion to the walls of the tube, sufficient additional coloured fluid is introduced to fill the tube up to the second division. This done, the point of the tube is again raised and the fluid is allowed to flow back from the point until its distal limit is in apposition with the first division. The proximal end of the column of fluid will now indicate the place where the third division ought to fall. Proceeding in the same way—the next time filling in the tube up to the third division with coloured fluid—the fourth division mark can be placed on the stem of the capillary tube. A fifth and subsequent divisions if desired can be obtained in a similar manner. For the purposes of the method which is to be described below it will, when operating with an original volume of five cubic millimetres, be convenient to place only three marks on the tube in the manner indicated, and then by a subsequent operation to subdivide each of these divisions into two equal subdivisions.

The process of subdivision in question is very simply achieved by the following system of trial and error. The first step is to guess the point on the tube where the first subdivision mark ought to be placed. This point may conveniently be indicated by a light pencil mark. This done, the coloured fluid is filled in up to this tentative subdivision mark. By tilting the tube the column of fluid is now allowed to run down from the point until its proximal end just touches the first of the original (five cubic millimetre) division marks. If it is now found that the distal end of the column corresponds accurately with the tentative subdivision mark, this mark will manifestly have been placed exactly at the proper point. If, on the other hand, the distal end of the column of coloured fluid now overlaps or falls short of the tentative subdivision mark, a second light mark is to be placed on the tube to indicate the point upon which that distal end falls. The true point of hemisection will now fall on a point of the stem midway between these two light marks. Having by the above procedure found the point corresponding to half the volume originally taken—in other words, to 2·5 cubic millimetres—the points corresponding with one and a half and two and a half volumes respectively are easily found by a procedure exactly identical with that described in placing the original, five cubic millimetre, division marks upon the capillary stem.

It is to be noted that it is not essential that the tubes should be graduated in terms of 2·5 cubic millimetres, or indeed of any definitely known measure; it will suffice for almost all purposes if the capillary stem is divided into equal arbitrary divisions by the method described in the paragraph last but one above. At the same time the calibration in terms of 2·5 cubic millimetres is convenient as giving definite indications of the actual quantities of bacterial culture and serum actually employed.

Method for obtaining the fresh serum required for the estimation.—The next point to consider is the method of obtaining blood serum for examination. Blood may be conveniently obtained from a prick in the finger and may be filled into blood capsules of the pattern elsewhere figured by me.[1] The blood capsule is, in accordance with a suggestion received from Major W. B. Leishman, R.A.M.C., introduced into a small hand centrifugal machine as soon as the blood has clotted. A clear serum is thus readily obtained within a few minutes after drawing off the blood.

Preparation of the bacterial culture employed in measuring the bactericidal power of the blood.—It will suffice under this heading to give indications as to how the bacterial culture is prepared in the case of the bacillus typhosus. The simplest method of operating is here to make a superficial stab into a gelatin tube (inoculating for this purpose from a broth cultivation) and to incubate this for from 12 to 18 hours at a temperature of about 22° C. If after this time the very first indications of growth can, on careful examination, be made out the culture may, after duly melting and mixing, be employed for the estimation of bactericidal power.

Failing a young gelatin culture such as is just described a suitable culture can be obtained by placing 2·5 cubic millimetres of a tenfold diluted young broth cultivation of the typhoid bacillus into a tube of melted gelatin. Similarly, if only an older stab cultivation of the typhoid bacillus is available, this may be diluted 10 or more times with gelatin. In this last case the amount of dilution necessary to give the required number of colonies in the culture tube will readily after a little practice be learned. Until this experience shall have been gained it will be safer to employ only quite young gelatin cultures. It is convenient to employ for the estimation of bactericidal power a culture containing not less than 50, and not more than 200, colonies in 2·5 cubic millimetres of gelatin.

Method of making the blood dilutions.—The indications given under this heading will again relate only to the case where the bactericidal effect upon typhoid bacillus is to be elicited. In connexion with such determinations it will be convenient to employ, in addition to undiluted blood, dilutions of five-, ten-, twenty-, and forty-fold. Dilutions of this order when mixed with equal volumes of gelatin may be expected to show bactericidal effects. Higher dilutions will occasionally be required. The dilutions are made by means of the capillary pipette, the motive force required being obtained by the compression or relaxation of a rubber teat fitted on to the broad end of the pipette. The means for making the five-fold dilutions are provided by the division marks which have been placed on the stem of the pipette. The higher dilutions can be made from these primary ones. The procedure for measuring out equal volumes of typhoid gelatin and serum or serum dilation, and for introducing these into the capillary cultivation tubes, and for affecting the necessary mixture must next engage our attention.

Description of capillary cultivation tubes.—The capillary tubes which are illustrated in Figs. 1 and 2 are easily made in pairs by taking a piece of glass tubing of about three-sixteenths of an inch in diameter and drawing this out in a flame into a capillary stem of from one-sixtieth to one-hundredth of an inch in diameter. Before the glass cools the wider ends of the original piece of tubing are bent round upon the capillary stem in such a manner as to form a right angle with it. Finally, the capillary stem is burnt through in the middle, a slight pull being, during this process, exerted upon the ends of the tube in order to obtain

[1] Brit. Med. Jour., Feb. 5th, 1898.

the very fine terminal hollow filaments which are represented in Fig. 1. The reason for these procedures will presently appear.

Provision for warming the capillary cultivation tubes and for keeping the gelatin culture liquid.—For this purpose a beaker of warm water may be used; it is, however, more convenient to employ a hot-water box, fitted with a warm shelf for the reception of capillary cultivation tubes and sterile watch-glasses, and with provision, in the form of a series of metal tubes let into the face of the box, for the reception of the tubes of the bacterial culture and diluting fluid. A tube of boiling sterile water is to be kept ready at hand for the purpose of warming and washing out the capillary pipette between the separate operations.

Procedure adopted for filling in the tubes.—The simplest procedure to adopt would at first sight appear to be to measure out with the capillary pipette into a sterile watch-glass the required quantities of the bacterial culture and serum and to draw these up, after mixture has been effected, into an ordinary straight capillary tube. In actual practice, however, this method proves unsatisfactory, as attempts to mix together the serum and the gelatin lead to the formation of a tenacious froth. As a result, not only is the greater part of the material lost, but it becomes practically impossible to draw up the mixture into the capillary tube in an unbroken column. To avoid these difficulties the procedure which is described below is adopted. Before describing it it will be convenient to consider the following. The cause of the frothing is, as reflection will show, to be found in the fact that the confined air on escaping from the capillary pipette becomes engaged in viscous fluid enveloping the mouth of the tube. In conformity with this the difficulty in question may be overcome by arranging that the viscid fluid shall on emerging from the mouth of the capillary pipette impinge on a perpendicular surface in such a manner as immediately to flow away, leaving the orifice of the tube unengaged. This indication may be complied with in practice by employing a cultivation tube such as is shown in Figs. 1 and 2, and by blowing out the contents of the capillary pipette directly on to the posterior wall of the tube as indicated in Fig. 1. The difficulty can be further circumvented by reserving, after the expulsion of the required quantum, a certain residuum of fluid in the capillary stem. In actual practice this resolves itself into reserving, as indicated in Fig. 1, at least one measured volume of fluid in the stem. In the procedure described below, in which both these safeguards against frothing are employed in conjunction, the measured quantum of serum and bacterial gelatin culture can in each case be filled into the cultivation tube without either wastage or breaking of the column. The rationale of the procedure adopted in filling in the tubes having been explained I may now proceed to the description of the operation.

The capillary pipette is filled up to the second division with the particular serum or serum dilution which is to be tested. The point of the capillary pipette is then introduced into the liquefied gelatin culture[2] and one volume of this culture is drawn up into the pipette. When this has been done the proximal end of the column of fluid will stand opposite to the third division of the stem, the second and third divisions being occupied by serum and the first by the gelatin culture. The end of the capillary pipette is then introduced into the mouth of one of the capillary cultivation tubes which has just been taken down from the warm shelf. The tip of the tube having been placed in position against the posterior wall the column of fluid is blown out, on to this perpendicular surface, until the proximal end of the column in the capillary pipette stands level with the first division mark on the stem (as shown in Fig. 1). Of the two volumes of fluid which will thus have been expelled from a capillary pipette the first is, as will be remembered, the gelatin culture, the second is the serum. These flow down in succession and lodge in superposed strata a little below the neck of the tube at the point indicated by the letter x. This done the tube is replaced on the warm

FIG 1.

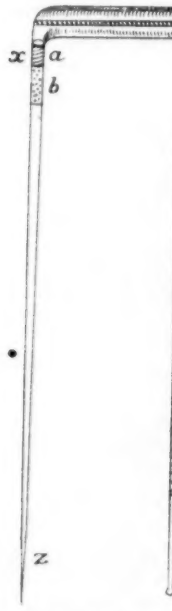


FIG 2.

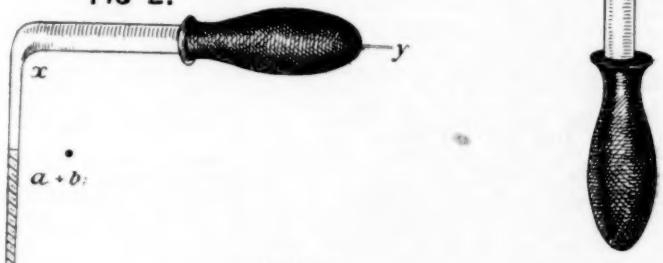


FIG 3.

Fig. 1. Capillary cultivation tube on the left and capillary pipette on the right, the point of the pipette being shown in position against the back wall of the cultivation tube. The gelatin culture (*b*) and the serum (*a*) have lodged in the neck of the tube. One volume of serum is shown as retained in the stem of the capillary pipette.

Fig. 2 shows the column of mixed serum and gelatin culture ($a + b$) which has, after mixing, been driven down into the capillary stem of the cultivation tube. The end of the tube (*z*) has been sealed in the flame, and the rubber teat is shown transfixed by the hollow glass filament *y*. The point at which the tube is afterwards burned off is indicated by *x*.

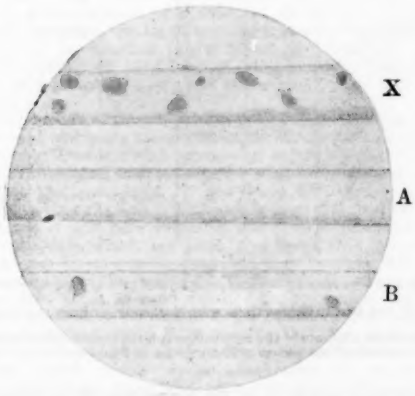
Fig. 3 shows the arrangement for mounting the tubes for microscopic examination.

[2] A minute bubble of air may, if desired, be allowed to intervene between the two volumes of serum and the one volume of gelatin. After a little practice this bubble of air is best dispensed with.

shelf. A whole series of tubes are filled in in this manner, each tube corresponding to a particular dilution of the blood which is to be tested. A series of control tubes, in which the serum is replaced by an indifferent diluting fluid, is then filled in. The next step is to effect in each case a mixture of the contents.

Method adopted for mixing the culture with the serum in the capillary cultivation tube.—It will be remembered that the serum and the melted gelatin are forming two separate layers in the cultivation tube. The procedure adopted for mixing these will best be understood if the principles of that procedure are first set forth. In the case of viscid fluids, such as liquefied gelatin and serum, an attempt to produce mixture by allowing air to bubble through the fluids would, owing to the frothing which would be produced, be inadmissible. Effectual mixture can, however, be obtained by causing the contents to rise and fall in the funnel-shaped upper part of the cultivation tube by an alternate rarefaction and condensation of the air in a rubber teat affixed to the upper end of the tube. Certain difficulties are, however, incident to the procedure. If the teat is placed upon the upper end of the tube without special precautions it will be found in nine cases out of ten that the air in the interior of the tube will either have been rarefied or condensed. In the case where a positive pressure has been

FIG. 4.



Shows the appearance of the cultivation tubes as seen under the microscope. X represents a control tube containing numerous typhoid colonies. A represents a serum tube filled in with equal volumes of normal blood and serum. B represents a serum tube filled in with a higher dilution of serum which has a marked but not complete bactericidal power.

produced the breaking off of the end of the capillary tube will now be followed by the forcible expulsion and loss of the contents of the tube. Where, on the other hand, a negative pressure has been produced by affixing the teat in an unexpanded condition, the contents will run up into the teat as soon as the tip of the capillary stem is broken off, and, as before, be lost. It will be necessary, therefore, before breaking off the tip to take steps to equalise the pressure inside and outside the teat. This may be effected in a very simple manner by employing a rubber teat the wall of which has been pierced by an extremely fine hollow glass filament. Manifold advantages result from this arrangement. If, for instance, the teat happens to have been placed upon the tube in a fully expanded condition, and it is desired that the first movement of the contents shall be in the upward direction, the negative pressure which is required may be obtained without removing the teat by pressing out through the capillary vent provided any desired quantum of air and then relaxing the pressure of the finger and thumb. If, on the other hand, the teat has been placed upon the tube in a quite unexpanded condition, and it is desired to impart to the fluid in the neck of the tube first a downward movement, the air may be simply allowed to run into the teat through the vent until a sufficient cushion of air has been obtained. Corrections of this kind can, if required, be made at any stage of the procedure. If the tip of the tube has been broken off it will, of course, be necessary, before making the correction, temporarily to seal up the open tip again in the flame.

A further point is to be noted. Where the calibre of the stem of the capillary cultivation tube is disproportionately large in proportion to that of the capillary tube which serves as a vent the movement of the fluid in the tube will not be sufficiently under control, with the result that the column of fluid may be subjected to sudden jerks, which may lead to the dislocation of parts of the column or to the bubbling up of air through the fluid. With a view to avoiding these accidents it is well in every case to draw out the lower end of the capillary cultivation tube into a very fine filament, such as is represented in Fig. 1, *z*. If this has not been done in the making, the end of the tube may be drawn out in a peep-light immediately before the teat is placed upon the tube.

Recapitulation and amplification of the account given of the procedure so far as it relates to the filling and mixing of the tubes.—To recapitulate: after the required dilutions of serum have been made in sterile watch-glasses and the gelatin culture has been prepared the capillary pipette is first washed out in boiling sterile water. Two volumes of serum or, as the case may be, of serum dilution are taken up into the pipette and are followed by one volume of the gelatin culture. The capillary cultivation tube is then taken down from the warm shelf and two out of the three volumes of fluid which have been filled into the pipette are expelled on to the posterior perpendicular surface of the cultivation tube. The cultivation tube is then laid down again on the warm shelf. After a series of tubes corresponding to each of the serum dilutions have been filled in in this way the mixing process is undertaken. For this purpose a teat provided with a capillary vent is fitted on to the cultivation tube, the fine capillary filament at the end of the tube is broken off, and the culture is thoroughly mixed with the serum or serum dilution by causing it to rise and fall in an alternating manner in the neck of the tube. This done the fluid is blown down again into the stem and the tube is sealed. The dilution is then inscribed with a wax pencil on the broad end of the cultivation tube and the series of tubes is placed in a test tube labelled with the date and the name of the patient. When this process has been completed the tubes are placed in an incubator and are incubated for two or three days at a temperature of 22° C. They are then mounted for microscopical examination.

Method of mounting and examining the capillary cultivation tubes.—The capillary stem of each tube is first melted off in a small peep-light at the point indicated by the letter x in Fig. 2. Provision for mounting these has previously been made in the following way. An ordinary microscopic slide is taken and a little pillar of sealing-wax is placed at each corner. Canada balsam or cedar oil is then poured upon the slide. This is then covered up by a second microscopic slide, the ends of which have been heated in a flame so as to cause them to adhere to the top of the sealing-wax pillars. In pressing down the covering slide upon the sealing-wax pillars care is taken to allow sufficient interspace between the slides for insertion of the capillary tubes. These last are introduced from the side. They then appear as seen in Fig. 3. The slide thus prepared is transferred to the stage of the microscope and the enumeration of the colonies is undertaken with an objective of comparatively low magnifying power—a two-thirds of an inch objective is convenient. The microscopical appearances seen in the control tubes and in the serum tubes respectively are represented at X and A and B respectively in Fig. 4. By enumerating the number of colonies in the various dilutions in this manner it is ascertained (*a*) in what dilution the blood kills all the bacteria which have been introduced; (*b*) in what dilutions the bacterial colonies are appreciably diminished as compared with those in the control tubes; and (*c*) in what dilution the serum admits of the unrestrained growth of the bacteria.

Conditions which are essential to accuracy.—After a little experience with this method it will be found that extremely accurate results can be obtained, the differences in the number of colonies which develop in a series of control tubes being then almost negligible. The chief points to be attended to to secure accuracy in the results are the following. *First*, the bacteria must be evenly distributed throughout the gelatin culture which is employed for testing the bactericidal power. This object is in practice readily attained by pouring the liquefied gelatin 25 times from one

TABLE SETTING FORTH THE BACTERICIDAL EFFECT OF NORMAL HUMAN BLOOD AS DETERMINED BY THE METHOD DESCRIBED.

Initials or other indication of the source of the blood.*	Date of examination.	Number of typhoid colonies in the serum tubes. Serum dilutions.†							Number of typhoid colonies in the control tubes.		
		2	10	20	40	50	80	100	Tube 1.	Tube 2.	Tube 3.
Serum of 10 normal men (pooled)‡	1900. Oct. 11th.	0	0	0	0	—	—	10	5	5	5
N. S. W.	,, 13th.	0	0	—	36	—	51	73	41	52	43
G. H.	,, 13th.	0	3	—	20	—	43	—			
R. F. M. F.	,, 13th.	0	1	—	17	—	69	—			
S. B. S.	,, 18th.	0	0	—	Over 200	—	Over 200	—	Over 200	Over 200	Over 200
Captain C. W.	,, 23rd.	0	0		—	Over 100	—	100	Over 200	Over 200	Over 200
W. R.	,, ,,	0	0	0	—	4	—	24			
R. N. H.	,, ,,	0	0	0	—	49	—	8			
G. H.	,, 26th	0	0	1	7	—	20	—	0	12	13
G. H.	,, 29th.	0	0	0	—	Circ. 100	—	—	Circ. 200	Circ. 200	Circ. 200
J. G. G. S.	,, 29th.	0	3	4	—	Circ. 100	—	100	150-200	150-200	150-200
W. A.	,, 30th.	0	0	Over 200	Over 200	—	Over 200	—	Over 200	Over 200	Over 200
A. P.	Nov. 1st.	0	12	105	Over 200	—	—	—	,,	,,	,,
S. A. R.	,, 5th.	0	0	0	0	—	100	100	,,	,,	,,
C. W. M.	,, 5th.	0	0	0	0	—	18	—			
H. P.	,, 6th.	0	0	0	—	40	—	55	150-200	150-200	150-200
J. L. J.	,, 6th.	0	0	0	—	20	—	72			
W. M. B. McC.	,, 8th.	0	0	0	—	2	—	39			
W. H. L.	,, 8th.	0	0	0	Over 200	—	Over 200	—	200-300	200-300	200-300
W. D. P.	,, 8th.	0	0	0	100	—	100	—			
A. W. G.	,, 12th.	0	0	0	0	—	0	13	Over 200	Over 200	Over 200
A. P.	,, 12th.	0	0	10	9	—	54	—			
G. G. S.	,, 13th.	0	0	8	86	—	Over 200	—	,,	,,	,,
T. F.	,, 13th.	0	0	0	5	—	22	—			
S. B. S.	,, 15th.	0	0	0	13	—	55	—	Over 300	Over 300	Over 300
A. W. C. Y.	,, 15th.	0	0	5	44	—	57	—			
H. R. B.	,, 15th.	0	1	0	30	—	70	—			
R. B. B. F.	,, 15th.	0	12	9	28	—	52	—			
H. G. P.	,, 15th.	0	0	3	31	—	46	—			

In every case young sub-cultures of a culture of a bacillus typhosus which had been recently isolated from a fatal case of typhoid fever were employed.

* The bloods employed were drawn off from healthy young men. In all but two instances these were Surgeons on Probation at Netley whose ages ranged between 21 and 28 years.

† The dilutions indicated by the figures represent the proportion borne by the whole contents of the cultivation tube to the contained serum.

‡ The serum in question was obtained by mixing together equal volumes of the serum of 10 Surgeons on Probation.

test-tube into another. *Secondly*, the capillary pipette must be carefully cleaned and warmed by washing it out each time in boiling sterile water. *Thirdly*, the gelatin culture must be kept well above its melting-point from start to finish. The cultivation tubes also should be kept on a warm shelf, both before they are filled in, and afterwards, during the interval between filling in and mixture. *Fourthly*, the mixture of the serum, or serum dilution, with the gelatin culture must be efficiently carried out. If this has not been done isolated colonies may, even in the case of tubes containing a highly bactericidal serum, make their appearance at one portion of the tube while the remainder of the tube is found quite sterile. Another point in connexion with the operation of mixing which has to be borne in mind relates to the shape of the cultivation tubes. In making these care must be taken to allow the glass to cool sufficiently to prevent it kinking at the elbow when it is bent round. Kinking of the tube at this point frequently entails the breaking of the column during the operation of mixing. *Lastly*, attention may be drawn to the fallacies which may be introduced into the observations by the use of an inappropriate diluting fluid. In the case of the bacillus typhosus normal salt solution is a very unsuitable diluting fluid. Where it is employed the number of colonies in the higher dilutions of the serum will uniformly be found less than in some of the lower dilutions. In other words, the suspension of the bactericidal powers of the serum obtained by dilution is, where normal salt solution is used as a diluting fluid, over-compensated for by the bactericidal powers of this last fluid. On the other hand, ordinary broth or, even better, saltless peptone broth, constitutes a very satisfactory diluting fluid, the number of colonies being in such a case always more numerous in the higher than in the lower dilutions of serum.

Preliminary account of some of the results obtained.—Having described the most important points of the procedure adopted, it may be well, in conclusion, briefly to glance at some of the results which have been obtained by the application of the above method. It need hardly be said that these are here dealt with only in a preliminary way, for it will be manifest that the problems which are opened up would require the unremitting labour of months, if not of years, for their effective solution. It will be convenient to begin with the bactericidal effects exerted by normal human blood upon the bacillus typhosus. The results of close upon 50 examinations of normal bloods (all instituted with young subcultures of a typhoid bacillus recently isolated from a fatal case of typhoid fever) show somewhat remarkable results. The bactericidal effect was in all cases found complete in a two-fold dilution. In 22 out of the 28 blood examinations separately tabulated above a complete bactericidal effect was obtained also in a 10-fold dilution. In 50 per cent. of the bloods examined the complete effect was obtained also in a dilution of 20-fold. In 15 per cent. it was again complete in a 40-fold dilution. Only in one case was the bactericidal effect complete in a dilution higher than 40. A conspicuous feature in the results is the very considerable individual variation in bactericidal power. It must be carefully understood with regard to these results that they apply only to the particular culture which was used. In a subsequent paper the question will be considered as to whether a greater bactericidal effect is exerted on cultures which have been attenuated by cultivation in artificial media than on cultures the virulence of which has been exalted by a series of

passages through animals. Further, it is to be noted that the data which are given above apply in each case to the effect of sera which have been brought into application within two or three hours after the blood has been drawn off from the body. When sera are kept for a day, and even more so when they are kept for 48 hours, a very considerable decline in bactericidal power makes itself manifest. The data concerning this will also be given in a subsequent paper. Suffice it for the present that the results which have been obtained confirm in a general way those of Buchner. The same holds true with regard to the effect which is exerted on the bactericidal power by temperatures of from 56° to 60° C.

The modifications in the bactericidal power of human blood produced by additions to that blood *in vitro* of specific anti-typhoid sera may next be considered. Up to the present two different anti-typhoid sera have been studied from this point of view. Both of these were highly agglutinating sera placed on the market for therapeutic use. The effect produced by both these anti-typhoid sera were to a large extent similar. In every case even quite small additions of these sera to normal human blood brought about a complete, or all but complete, abolition of the normal bactericidal power of the blood, colonies of the typhoid bacillus making their appearance in large numbers even in mixtures containing one part in four of normal blood. Up to the present no increase of bactericidal power has been ascertained to result from the addition to a normal blood of the "therapeutic sera" in question. The importance of the issues thus opened up is immediately evident, for it is not clear that benefit would be derived from the therapeutic administration of a dose of serum which produces effects like these. It is conceivable that experiments of the kind now in question might throw an important light on the utility or otherwise of various other therapeutic sera, in particular of certain anti-streptococcus and anti-plague sera.

The question of the alterations in the bactericidal power of the blood which are associated on the one hand with attacks of typhoid fever and with convalescence from this disease, and on the other hand with inoculation with dead cultures of the bacillus typhosus, must be postponed for discussion in a future communication. With regard to the first of these questions it will here suffice to say that it seems possible, from the data which are already to hand, that indications which may be of use in prognosis may be deducible from observations on the variations in bactericidal power during the course of a typhoid fever. In connexion with the second question it will suffice to put on record that after an interval (during which it is possible that the bactericidal power is reduced) a definite increase in the bactericidal power of the blood comes under observation in guinea-pigs which have been inoculated with sterilised cultures of the bacillus typhosus. The data, which have up to the present accumulated in connexion with the effect of inoculation on the bactericidal powers of the blood in man, are not as yet sufficiently numerous to allow of a definite statement being formulated. There appear, however, to be indications that the course of events in the case of man will show a general correspondence with that which comes under observation in animals. In conclusion, it may be recorded that a large series of comparative quantitative estimations of the agglutinating and the bactericidal powers of the blood have shown (as was surmised by many observers, of whom the present writer was not one) that there is no *direct* association between these properties of the blood. I give a table which sets forth certain of the data obtained in connexion with the bactericidal power of normal human blood.

Netley.

FUNGUS DISEASE OF THE EAR.

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IN order to show the frequency with which fungus disease of the ear is met with in Bombay during the rainy season I (W. K. H.) have collected all the cases treated at the Jamsetjee Jeejeebhoy Hospital during the month of October, 1899. I have verified diagnosis by microscopical examination and in several instances Dr. Row has kindly made a culture on agar-agar. Medical practitioners in Bombay often speak of the liability to disease of the external ear in this climate and they generally diagnose the conditions as furunculosis. I am convinced, however, that in most cases the disease is really aspergillosis and the small pustules seen in the canal are merely the result of a growth of a fungus. Von Roosa in his able work has tabulated several varieties and he states that in his opinion the fungus is the cause of the eczematous condition of the canal and not secondary to it. I quite agree with this opinion; moreover, it will be seen from the tabulated cases that in only one was there any pre-existing disease of the ear; this patient had a perforation and discharge some months before which had been treated and stopped by means of nitrate of silver. The ear remained well until the appearance of a fungus; there was therefore no discharge seen before the symptoms were experienced. Formerly there had been several recurrences of discharge with inflammatory symptoms from the affected ear and on none of these occasions was any fungus found, so that I may say that the fungus in all the cases was really primary. There appears to be a considerable difference in the symptoms due to fungus, varying from slight to considerable deafness and attended by pain which is occasionally severe. There is also a good deal of discomfort, generally described, in fact I may say almost universally, by native patients as "heaviness" and sometimes also "stuffiness," but this symptom varies, I think, according as to whether the canal is blocked up by epithelium and fungus or whether the growth is merely a coating to the canal of slight thickness. In most cases the membrana tympani is obscured from view by the growth, or red patches may be seen on it here and there. In a very few instances I have observed small patches of growth on the tympanum only, without any signs of inflammation. Roughly speaking, cases may be divided clinically into dry and moist; in the latter class the symptoms of eczema are present to a greater or less extent and there is therefore a watery or slightly purulent discharge from the ear, and slight pain and deafness with a feeling of heaviness are usually complained of. In the majority of cases the aspergillus niger is found. There is a quantity of moist-looking epithelium on which black particles are plainly visible, having an appearance of grains of gunpowder. If the particles are plentiful there is more black than white visible, but if there are only a few it may not be easy to distinguish them readily. After syringing and the removal of the mass the walls of the canal are seen to be red and denuded of epithelium and often irregular, with small furuncles and swellings, and the membrana tympani may be bright red in colour or dull and sodden in appearance. Often the aspergillus flavus can be seen growing on the surface of small superficial pustules and if in any quantity the small balls of sporangia are plainly visible. The growth of penicillium glaucum gives a fluffy appearance to the surface.

In the "dry" variety the symptoms of pain, uneasiness, and deafness are also complained of, but there is no discharge, and the canal on examination may be found either to be stuffed full of epithelial débris with yellow, black, or brownish-looking particles sprinkled on the surface, or the walls of the canal are coated with a crust, usually of a darkish colour, on which the fungus is seen growing. The appearance is not unlike that of rhinitis when dry crusts coat the surface of the mucous membrane; the tympanum is therefore visible, but the surface is generally partially coated with a similar fungus to that on the canal. Sometimes white patches on the tympanum also are met with and they are difficult to remove. After syringing the walls of the canal appear red but dry and the membrana tympani is not so often inflamed as in the moist variety. Diagnosis is readily made after a few observations and confirmed by microscopical examination; sometimes the amount of spores is largely in excess of the mycelium.

The treatment which I have adopted in both varieties is the same and it consists in syringing very thoroughly and using iodoform and boric acid in equal parts. The canal may be swabbed out with camphorated salol, but the drugs used are not of themselves so important as frequent cleansing. It is not necessary to say more than this—that cleanliness and dryness are most efficacious.

Notes on some fungi recovered from the cerumen of the ear from the private notebook of Dr. Row.—Out of the 10 specimens which were kindly collected and sent to me for examination by Lieutenant-Colonel Hatch, I.M.S., only one gave a negative result. From the rest a variety of fungi

SUMMARY OF CASES OF FUNGUS DISEASE OF THE EAR TREATED IN THE JAMSETJEE JEEJEEBHOY HOSPITAL DURING OCTOBER, 1899.

No. of case.	Caste.	Variety of fungus.	Symptoms.	Appearances.
1	Hindoo.	Aspergillus flavus.	Four days' duration; slight pain and deafness.	The canal was not blocked; no discharge; yellow growth on the surface of the tympanum.
2	Mahomedan.	Aspergillus niger.	Deafness; severe pain in the parotid region of two years' duration.	At the bottom of the canal was a black mass with yellow spots on it. After removal the tympanum was red and angry-looking; the canal was sodden.
3	Hindoo.	Aspergillus niger.	A pricking sensation in the left ear and humming noises; pain in front of the tragus of three days' duration.	Blackish spots on the canal and on the membrana tympani; the spores were small and of a brownish colour.
4	Hindoo.	Aspergillus niger.	Pain and slight deafness of eight days' duration.	The membrana tympani was surrounded by yellowish-brown material and white towards the centre, due to a mixture of epithelium and black fungus.
5	Mahomedan.	Aspergillus flavus.	A pricking pain in the left ear of four days' duration.	The canal was very dry-looking. On the membrana tympani was a white patch with a yellow growth on it, and there was a similar appearance on the wall of the canal. Yellow fungus was found under the microscope.
6	Hindoo.	Aspergillus niger.	Pain in both ears for six days and also an itching sensation.	Both canals were choked with sodden epithelium. On these were black patches. Under the microscope large stalks of aspergillus niger and many spores were seen.
7	Mussulman.	Aspergillus flavus.	Pain, at first slight, in the left ear, but it gradually increased and a watery discharge appeared.	There was a watery discharge, the wall of the canal was eczematous. White spots were seen on the membrana tympani; a fine mycelium and yellow sporangia were seen.
8	Parsee.	Aspergilli flavus and niger.	Itching sensation in the left ear, with headache, tinnitus, and watery discharge. Similar symptoms in the right ear but not so marked.	The left canal had a dry appearance and on the anterior wall there was a dry whitish patch, while the posterior wall appeared dry and black. The right canal looked much the same. A mixture of both yellow and black fungus was found in both ears, the black variety predominating in the right ear and the yellow in the left.
9	Eurasian.	Aspergillus niger.	For two or three days the patient had suffered from a pricking sensation in the left ear, headache, noises, and restlessness. There were also a good deal of pain and deafness (of old standing).	Some thick pus and darkish fungus-like masses were seen in the left ear. On removal the membrana tympani was found to be inflamed and was perforated in the centre. This was an old perforation for which I had a few weeks before treated the patient. The fungus had a rusty brown colour under the microscope.
10	Mussulman.	Aspergillus niger.	For 10 days there had been pain and throbbing in the left ear, but no discharge.	The canal had a dry appearance. There were numerous spores of a dark colour, but no mycelium was found.
11	Hindoo.	Aspergillus flavus.	Throbbing in the ear of one day's duration with heaviness. There was no discharge, but there had been a little a few days previously.	The canal was lined by a coating of a yellowish colour, with white patches here and there. Yellow fungus was found.
12	Hindoo.	Aspergillus niger.	For three days the patient had had heaviness, deafness, and some pain in the left ear.	The canal was blocked with epithelium and dark masses which proved to be aspergillus niger.
13	Mussulman.	Aspergillus flavus.	For the last 12 days the patient had had slight pain, heaviness, and deafness of the right ear.	The canal was dry, with yellow spots on white patches. Yellow fungus was found.
14	Hindoo.	Aspergilli niger and flavus.	Slight pain and deafness of five days' duration.	The canal looked dry. There were a few pustules on the wall and black and white patches on the canal wall. Aspergillus niger was found and a few yellow sporangia were seen.
15	Mussulman.	Aspergillus niger.	Pain in the left ear of five days' duration and fulness.	The canal was dry. There were black spots on the walls. Aspergillus niger was found. There were small and very large stalks.
16	Mussulman.	Aspergillus flavus.	The patient complained of heaviness of the right ear of six days' duration. There was no pain.	The canal contained cerumen coated with a fluffy growth. Aspergillus flavus was found and large stalks and sporangia were seen.
17	Eurasian.	Aspergillus niger.	For six weeks the patient had had itching in the right ear and lately slight discharge. There was no pain and the hearing was not impaired.	The canal was inflamed and elsewhere covered with dry-looking epithelium. Plenty of mycelium and brownish spores were found.
18	Parsee.	Aspergillus albus.	Increasing deafness of three days' duration and a heavy sensation in both ears.	The canal looked eczematous. There was a quantity of white epithelium near the tympanum, the membrane being obscured. Fine mycelium was found, but there were no spores. Culture by Dr. Row showed aspergillus albus.
19	Jew.	Aspergillus albus.	Much pain in the left ear (more at night) and deafness.	The left canal was dry. White pustules were seen on the walls and also on the membrana tympani. Aspergillus albus was found.
20	Mussulman.	Aspergillus niger.	Itching followed by pain of seven days' duration.	The canals were blocked by epithelium and black masses. Black spores and thick stalks were found in both.
21	Mussulman.	Aspergillus niger.	Pain in the left ear with subsequent watery reddish discharge of three days' duration; no deafness.	The surface of the canal looked dry. There were white patches on the floor. Thick mycelium and rusty-coloured spores were found.
22	Parsee.	Aspergillus niger.	For 15 days there had been pains and deafness in the right ear and three days previously a serous discharge was noticed.	There was a large epithelial plug in the canal with black spots on it and having a moist appearance. Black fungus was found.

were isolated of which the most conspicuous were aspergilli of different species. From two specimens penicillium glaucum was isolated.

Method.—Of all the nutrient media used for isolation the one that answered best was maltose agar 2 per cent. Glucose agar answered next best. Ordinary peptone broth gave a fair growth of the mycelium and in depths the individuals formed flakes which on examination were found to be destitute of conidia. It is therefore interesting to see that under these conditions the increase in growth may simply be the vegetative increment of the mycelium. A great number and variety of staphylococci and streptococci were always found in the material used for inoculation and consequently in the original swabs. It was only by picking out the fungi of the higher order that pure growths were obtained and used for detailed study and examination. The various specimens which were thus isolated appeared in the early stages of their growth so very similar, both in their naked-eye appearances as well as in their broad microscopical characters, that it was extremely difficult to relegate them to their proper sub-order. Thus in 24 hours, just as is usual with all moulds, the individual colonies appeared as small specks, with firm, feathery radiations, the whole colony appearing perfectly circular. They were slightly white, and being translucent and thick no colour characteristics were detectable. At a later stage of their growth, however, identification was rendered easy by the following characters: (1) by the colour assumed by the sporangia *en masse*, this being more pronounced at the centre of the colony than at the periphery; (2) by the comparative size of the sporangia and their shape and minute details relative to the arrangement of the radiating sterigmata bearing the spores; and (3) by the temperature at which the various members grew best.

1. Thus aspergillus niger, aspergillus flavescens, aspergillus viridescens, aspergillus fumigatus, aspergillus albus, and aspergillus glaucus showed their various characters by the

Aspergillus viridescens (3 D). Microscopic appearance; various stages of growth.

colour of the growth *en masse*. That all these belonged to the aspergillus race was proved by the microscope which brought out all the characters easily. The character of the conidia requires scarcely any remarks as there was absolutely nothing new which could be observed, except in one case where both in the specimen as well as in the culture separate conidia were found of a nature which, by the pseudo-radiate arrangement of the sterigmata, roused some suspicion as to the mould being related to actinomyces. But subsequent culturing and staining by the Gram-Weigert method removed all doubts as to the identity of the specimen, which ultimately turned out to be aspergillus flavescens. The only points which may be mentioned here are: (1) the comparative size of the conidia in various specimens; and (2) the relation in size of the sterigmata to the conidiophore as seen in the various specimens. Thus of all the conidia those of aspergillus niger were larger than those of any other. The large size is partly due to the excess of sporulation, the spores in mature specimens growing to such an extent as to mask the minute structure of the conidia, which then appeared as irregular spheres. The sporangia in aspergillus glaucus were found to be the smallest and in some specimens the structure was clearly defined, the whole appearing perfectly symmetrical with the fine sterigmata radiating in such a way as to give the specimen an appearance not unlike a sunflower. The arrangement of sterigmata in these two specimens was, as seen from fresh as well as stained specimens, all round the clavate, flask-shaped or even spherical end of the conidiophore, the individual sterigmata radiating very symmetrically and giving rise to the appearances above indicated. The conidia in aspergillus flavescens and aspergillus viridescens, however, showed that the sterigmata in mature specimens were arranged round only a part of the circumference of the conidiophore, so that the whole fructification appeared like a half or three-quarter sphere when examined microscopically (see figure). The actual diameter of some of the conidia is as follows: aspergillus glaucus, 27 μ; aspergillus viridescens, 72 μ; aspergillus fumigatus, 31·5 μ; and aspergillus niger, 108 μ.

2. Without entering into details on the relation in size of the sterigmata to the conidiophore I may cite the instance of only one or two specimens where this was conspicuously noticed. Thus in aspergillus glaucus the central core of the conidium—that portion contributed by the conidiophore—is only 13·5 μ, while that of the radiating spoke of the sterigmata is just half of this, while in aspergillus viridescens the proportion of the central to the peripheral zone is as 45 μ : 13·5 μ.

3. The most favourable temperature for the growth of aspergillus niger was found to be from 25° C. to 28° C., while that for all the rest was from 35° C. to 38° C.

The following is the tabulation of the various fungi recovered from the specimens of cerumen which were collected for examination.

Nature of fungus.	Specimens of cerumen from which they were recovered.
Aspergillus niger on maltose agar (four days).	Specimen 1.
Ditto, microscopically.	
Aspergillus viridescens, four days on maltose agar.	Specimens 2, 3, and 7.
Microscopically, in various stages of growth.	
Aspergillus fumigatus lighter.	Specimens 2 and 3.
" " darker.	
Aspergillus albus.	Specimens 1 & 10A.
Aspergillus glaucus, four days.	Specimens 1 and 2.
Microscopically.	
Penicillium with oidio-spores, four days. Maltose agar.	Specimen 10.
Microscopically.	
Aspergillus flavescens, very vigorous on agar (three days).	Specimen 6.
Penicillium (greyish coloured).	Specimen 1.
Pseudo-radiate arrangement of sterigmata in a mass of mycelium.	Specimen 3.

Since writing the above I (W. K. H.) have had an opportunity of seeing the effect of administering subcutaneously some of the fungi above named to rabbits and monkeys. The lesions in these cases were invariably localised abscesses at the seat of inoculation, containing pultaceous, almost doughy pus, containing the mycelium as well as conidia. The abscesses, as a rule, were well encapsuled, so as to admit of an easy dissection. In one case where only the mycelium was inoculated the abscess contained more fluid contents tinged with blood. This eventually burst and the parts healed. The further study of mycosis is still in progress. A table of cases treated during October, 1899, is appended.

[The paper was accompanied by an excellent series of

coloured drawings illustrating all the various forms of fungi mentioned. We regret that the space at our disposal does not permit us to reproduce them.—ED. L.]

SOME NOTES ON CASES OF MOVEABLE KIDNEY,

WITH REMARKS ON THEM.[1]

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"MOVEABLE KIDNEY" is not a very common condition, for on looking through my note-books, in which I have kept short notes of every patient whom I have seen at my house for the past 20 years, I can only find 14 patients in whom this condition has been certainly diagnosed out of the several thousands of patients who have passed through my hands during that period, although I have notes of 25 cases which presented some difficulty at first in determining whether this condition was present or not. I propose to bring before you notes of the most interesting of these patients which illustrate the difficulties that are met with in making a diagnosis or which raise points that seem to me worthy of consideration. Hilbert distinguishes two grades of these cases. In the first only the inferior pole and not more than the lower half of the kidney can be felt. This he calls the palpable kidney. In the second grade he places those cases in which "the whole kidney can be felt and can be isolated with the fingers." This he calls "moveable kidney." I very much doubt whether it is possible to say with any certainty that the condition which Hilbert describes as palpable kidney is the cause of any symptoms. At any rate, in the following case, in which recurring attacks of pain were attributed to this cause by two well-known physicians, this diagnosis proved to be entirely incorrect.

CASE 1.—The patient was a stout woman who was seen by me in consultation in March, 1886. She was about 50 years of age, had had three children, and for about one and a half years previously to my seeing her she had been having frequently recurring attacks of pain. These attacks usually came on when she had walked some little distance, but they also came on at other times as, for instance, after walking downstairs. The pain would seize her in the right side just below the ribs and was often so severe that she had to have morphia injections. The pain did not pass into the back or down towards the bladder and was never accompanied by jaundice. There was no evidence of disease of any of the organs, but when the late Dr. Walter Moxon saw her he thought he could feel the end of the right kidney. She was seen by Sir George Johnson and Dr. Moxon, who both considered her condition to be caused by a "loose kidney," slight twisting of which caused the pain. Dr. Moxon in a letter to me said: "I think the drag of a shifted kidney would account for all the symptoms, especially if the twist on its hilus which the kidney undergoes interfered at all with its circulation." In 1890 I again saw the patient in consultation with Dr. J. Mortimer under whose care she then was. She was dying from albuminuria and the attacks of pain had continued up to this date more or less as before. It seemed then as if she might have a stone in the kidney which had caused disease of the organ. Subsequently we made a very careful post mortem examination. The kidneys were absolutely normal as to position and were well fixed and well surrounded by fat. The capsules of both were adherent and they showed the ordinary evidence of chronic Bright's disease. No calculus was found and there was nothing to indicate the cause of the attacks of pain. We proceeded to look for "gall-stones," which was my original diagnosis of the cause of the attacks of pain when I saw the patient in 1886, but the gall-bladder was normal and contained no gall-stones. On removing the liver and examining it very carefully we found a small, round, smooth gall-stone a little larger than a pea occupying the hepatic duct. This readily moved upwards and downwards and was without doubt the cause of all the symptoms which had been attributed to the "loose kidney."

With regard to the second grade in which "the whole kidney can be felt and can be isolated with the fingers," I would for purposes of diagnosis divide these cases into two very distinct classes. In the first the kidney can be felt in outline and can be replaced in its usual site in the loin and again displaced and replaced at the will of the examiner. The diagnosis of these cases is easy and mistakes are only possible when the condition is not looked for. As an example of this type I give the following case.

CASE 2.—The patient, a bright, highly educated single woman, aged 23½ years, had enjoyed very good health up to Christmas, 1897. In January, 1898, she drove nine miles to a county ball and danced several dances as usual. In the middle of a vigorous dance she felt suddenly so faint and sick that she had to lie down on a sofa upstairs for more than an hour and she could not again dance that evening. For the next three days she felt very unwell, with nausea but no sickness, after which she felt quite well. She continued well until March 11th when she was at a tiring social function standing all day. She hurried upstairs to dress for dinner and in the middle of dressing was attacked with sudden faintness and nausea which continued more or less for two or three days. She again appeared quite well until the middle of April when she undertook a railway journey to Bath, and on the night after her arrival, after running upstairs to dress for dinner, she was again attacked in the same way and affected for about the same period of time as before. After this she began to complain of pain in one spot about the centre of the epigastric region, and she complained of pain in this region whenever she swallowed food. She saw several medical men, who at first thought that she had obscure ulceration about the œsophageal end of the stomach, and she was kept in bed and dieted, but without avail. Then she was thought to have "nerves" and was ordered away to various places in Gloucestershire, Scotland, &c., for change of scene. It was noticed that for some days after all these journeys she was worse, with faintness, nausea, and pain in the epigastric region; then she would get better until she tried to exert herself, when after walking she always got an attack of pain or faintness and nausea. This state of affairs continued until January, 1899, when she was sent to London and rapidly in succession saw two eminent physicians there several times. She was said by both to be suffering from "nerves" and was ordered more changes of scene. Finally she was ordered by one of these physicians to have Weir-Mitchell treatment and she came under my care in the Home Hospital for this purpose. I found her a bright, cheerful, well-nourished patient, who did not at all seem to be suffering from "nerves." The curious history of her attacks led me to examine her carefully for a displaced kidney. I found the right kidney easily displaced so that it slipped down to the level of the umbilicus and was freely moveable between that position and the loin. The patient tried a pad and belt but did not care to wear it, and finally she saw Mr. Frederick Treves who stitched the kidney in position. I saw her 12 months after the operation when she appeared quite well; she could walk and apparently do anything that she wished without pain and without any return of her previous symptoms. She then told me that she had bought a bicycle in 1894 but had ridden it very little, as after riding it she always suffered from pain in the abdomen of so severe a character that she had to lie flat on the floor until it passed off. On making careful inquiries lately as to constipation her mother wrote to me saying that she had suffered much from constipation before her illness. It was obstinate, and she used to correct it with aperients, but after a time these failed; then after many days nature relieved itself but with much difficulty. She had no attack of pain but was, of course, much exhausted.

In the second class of case the tumour when found cannot be replaced in the loin. In these cases it is often difficult to make an accurate diagnosis. You have here to distinguish between tumour of fæcal origin, malignant tumour of the bowels and peritoneum, and small solid moveable ovarian tumours, and I have notes of each and all of these conditions in which it was quite impossible at once to arrive at a definite diagnosis. Hydrosalpinx, enlarged gall-bladder, the "tight lace lobe" of the liver, and hydatid disease, are also mentioned in books as causing difficulties in diagnosis, but I have never met with cases of these conditions which presented the least difficulty. It is well to recognise that these cases cannot be definitely diagnosed at a single interview. They require to be watched; possibly to be treated with

[1] A paper read before the Devon and Exeter Medico-Chirurgical Society.

enemas or aperients. In other cases it is necessary to have records kept of the temperature; while the general condition and weight of the patient should be noted and the condition of the tumour carefully examined. If these requirements are not attended to serious mistakes will be made, as happened in the following case.

CASE 3.—The patient, a widow, aged 60 years, who had had two children, was seen by me on August 15th, 1889. She considered herself to be quite well until about four months previously. Since then she had had much flatulence with a constant desire to defecate. The motions, which sometimes occurred four or five times a day, were small but of the usual consistence and were covered with mucus. She had lost five or six pounds in weight in the previous three months and she complained of weakness as well as of indigestion and occasional pain in the stomach. My notes say: "The abdomen is distended with flatus and the coils of the intestine can be seen together with peristaltic movements in them. Just below the ribs on the right side there is a tumour the size of a hen's egg. This is so freely moveable that I think it is intestine and is so hard that I do not think it is fæcal. The rectum is very freely dilated and I can detect no growth in it. Her weight, 99 lb." I prescribed one minim of carbolic acid and quarter of a grain of extract of belladonna three times a day. My notes of Sept. 29th run thus: "The patient has got on better and gained four pounds in weight (weight in some clothes 103 lb.). The abdomen is much less distended and she has had no pain in the bowels. The tumour is still in the same position but I think it is a moveable kidney; it appears reniform in shape with a depression in front which corresponds to hilus of kidney." Between that time and January, 1892, the patient paid me only seven visits. She continued pretty well, varying up and down, sometimes losing two or three pounds in weight and sometimes picking these up again. She continued her carbolic acid and belladonna pill twice daily and occasionally she took two or three teaspoonfuls of castor oil which invariably brought off a good deal of blood-stained mucus as well as excreta. The tumour continued the same and I never had any doubt during this time but that the tumour was a moveable kidney. In January, 1892, she had an attack of influenza and became very weak. She did not pick up but lost eight or nine pounds, her weight going down to 93 lb. She became dissatisfied with my opinion so I sent her to one of our leading London physicians, giving him particulars of the weights, &c., which I had observed. He took a very different view of her case and in a letter to me dated March 13th, 1892, he wrote as follows: "There is no doubt about the case any longer. She has a growth in the bowel, and I think in the peritoneum also for I can feel lumps in several places and inasmuch as the bowel contents above a stricture are almost never scybalous the lumps can only be contracting muscle or growth. The mass in the right side which seemed at first to you to be moveable kidney is, I suspect, also a mass of growth, for I can feel nothing of it in the loin as one usually can in a moveable kidney. And if it be growth I suppose it would be a growth in the hepatic flexure or the omega lip of the sigmoid spread out, as is most commonly the case. But I am not sure of this, because I can feel a polypoid growth in the rectum at the end of the finger, and that is very suggestive of a growth in the near neighbourhood of which it is an outpost. I cannot feel the stricture itself." He prescribed an aperient pill with some mild tonic which she took. She rapidly got worse and required daily visiting, so I handed her over to my friend, Mr. J. D. Harris, who had attended her family in previous years. Shortly after complete obstruction supervened and it was thought advisable, after consultation with Mr. A. J. Cumming, to perform lumbar colotomy. Mr. Harris performed colotomy in the ordinary way and he performed a most difficult operation extremely well, for he found the colon completely empty, and it is a matter of some difficulty to perform colotomy on an empty colon. Within a week the patient died and at the post mortem examination we found (1) that the tumour which I have described was the right kidney which was freely moveable and which seemed in every way more or less normal; and (2) that there was a band of adhesion which seemed to be inflammatory in its origin just below the position in which this kidney usually lay. This constricted the ascending colon just as it commenced to ascend at two or three inches from the cæcum and caused an obstruction. The cæcum behind this obstruction was much distended, being as large as a small stomach and the bowel behind this was distended with flatus as may be seen in ordinary cases of obstruction. There was no growth of any kind in the bowel or anywhere in the abdominal cavity.

This case is the only one of moveable kidney in which I have been able to make a post-mortem examination and it is from many points of view very instructive. It first of all shows the impossibility of diagnosing the cases which I have placed in my second class by merely taking into consideration the physical examination of the tumour and abdomen. For here was a palpable tumour which appeared to one observer to have all the characters of a moveable kidney while to another it appeared altogether different. It shows, too, that not always is anything of a moveable kidney felt in the loin, although there seemed no reason why this kidney could not be replaced in the loin as in the cases of the first class. And further it shows how intestinal obstruction may be caused by bands of inflammatory material even when a moveable kidney is present, and I think this is a more likely cause than by the renal pressure to which it has been sometimes attributed. Just below the place where the kidney usually lay was a band of inflammatory material causing a constriction and I think that it is not improbable that kidneys moving about freely in the abdominal cavity often give origin to similar bands of inflammation which interfere with the action of the bowels in various ways and possibly prevent these kidneys from being replaced in the loin. In this connexion it is interesting to note that in Case 5, in which I saw the patient at intervals of a year, the kidney did not appear nearly so moveable at the second examination as it had always done previously.

There are two symptoms associated with dyspepsia and various obscure abdominal pains which always make me examine for moveable kidney in a neurotic woman. These are recurring attacks of faintness and recurring attacks of nausea or sickness for neither of which any very evident cause can be found. Recurring attacks of faintness were a very prominent symptom in Case 2 and the same symptom will be observed in Case 4, while faintness and sickness constantly recurred in Case 5 and also in Case 10.

CASE 4.—The patient, a single woman, aged 25 years, had enjoyed very good health up to a year previously to my seeing her, when possibly she overstrained herself in riding 45 miles against the wind in one day on her bicycle. There was also a history of a possible strain when she pulled a girl companion into a boat from which she had fallen. She had also suffered from much constipation and straining at stool on several occasions, especially while taking a strong iron tonic shortly before her illness. A note of the case taken at this time reads as follows: "Illness commenced by her suddenly feeling faint in church and this has continued a symptom more or less ever since. She then began to get weak and generally seedy with a dirty-coated tongue and nasty taste in her mouth. She lost appetite and complained of a good deal of pain across the lower part of the abdomen and in the back." She was treated for indigestion especially with intestinal antiseptics and the Salisbury diet and was brought to me by her medical attendant because she was no better and as she was getting nervous and apprehensive that something altogether wrong was going on inside. I found all her organs healthy, but the right kidney was freely moveable. It could be moved from the loin to the level of the umbilicus and could be easily replaced. For the past two years the patient has worn a belt with a pad which seems to keep the kidney in good position and she has had practically no further inconvenience from her kidney and is now in good health.

CASE 5.—The patient in this case was a married woman, aged 43 years, who had had no children. She had never been robust and she used formerly to suffer from neuralgia of the head and teeth which ceased after her teeth were put thoroughly right. Her menstrual periods were normal in every way. Her bowels, as a rule, were very constipated. For several years she had suffered every two or three weeks from attacks to be subsequently described which she thought had been caused by over-fatigue, cold, and indigestible food. The attacks commenced with pain which began on the right side near the spine and passed forward to the epigastric region in front. After a time she seemed to have discomfort all over the abdomen and often got very faint. She was troubled with flatulence and if this did not pass off it ended in sickness. After these attacks the urine was highly coloured with a red sediment like brick-dust. The liver, the heart, and the lungs were normal. In the right iliac region was a tumour which was smooth, of the size of

an ordinary kidney, and reniform in shape. It was easily moved upwards toward the right lumbar region, but this gave some pain and it could not be moved into the normal position of the kidney. The patient could not remember to have had any strain but she had always suffered very much from constipation. She was once quite free from attacks for nine months, during which time she was taking Carlsbad salts every other morning. I saw her again one year after her former visit. The kidney was in the same condition but was not nearly so moveable She had not had any constipation and she had had no attacks of pain.

In considering the causes which predispose to and which bring about, this condition I am not going to refer to the anatomy of the kidneys or to the supports by which they are usually kept in position. The anatomy and supports of the kidney are more or less the same in men as in women, and yet the condition of moveable kidney in men is so rare that personally I have never yet seen it. This is the more remarkable because if we consider the so-called immediate causes of dislocation—a blow, a fall, a twist of the spine, carrying a weight on the back when the body is bowed forward, violent coughing, or straining in vomiting or parturition—we shall recognise that with the exception of straining in parturition men are very much more exposed to these causes than are women. We have, then, to find something which is especially peculiar to women which will account for the fact that moveable kidney is so much more frequently found in them than in men. Many writers have considered that moveable kidney is most frequently associated with pregnancy and that most cases are recognised for the first time when the abdominal parietes are relaxed by parturition. My cases do not bear out this view at all, for of the 14 cases which I have collected five occurred in unmarried ladies who had never been pregnant and three in married women who had never had any children, while of the other cases in two each patient had had one child only, in one the patient had had two children, in one four children, in one five children, and in one 15 children. I do not think it is at all certain that pregnancy predisposes to moveable kidney. Nearly every week at the hospital, at the dispensary, or in my private practice I get cases of various displacements of the uterus associated with, or caused by, pregnancy or frequent parturition, but I have never found among these a case of moveable kidney due to this cause, although I have repeatedly examined for this condition in the cases of a very large number of these patients. Other authors have pointed out the influence of tight-lacing as a cause of the displacement and Hertz has shown that "in most cases the tight-lace line on the liver is on the same level as the upper pole of the kidney." But how common tight-lacing is, and how comparatively rare is the condition of moveable kidney. It is my belief that a large proportion of the anæmia in girls is due to tight-lacing, and for several years it was a custom of mine to measure the waists of all the anæmic girls who came before me at the Exeter Dispensary and the corsets they were wearing, and I have records of dozens of cases of anæmia in which waists which naturally measured 22, 23, and 24 inches were compressed into corsets measuring 19, 18, 17, and 16 inches. Yet I never met with a single case of moveable kidney amongst these anæmic girls attending the dispensary, though I have repeatedly seen their livers displaced by tight-lacing, and in one of my private patients the liver was so displaced from the same cause that it filled the abdomen to the level of the crest of the ilium.

Several of my cases have much impressed me with the part which chronic constipation and the straining which is often associated with it play in producing moveable kidney. Constipation, more or less marked, seems to be of such common occurrence amongst women that it may almost be reckoned amongst their sexual peculiarities. We may call to mind the dictum of a celebrated London lecturer who commenced his lecture on gynæcology as follows: "Woman, gentlemen, is a creature of periodicity. She micturates once a day; she defecates once a week; she menstruates once a month; and she parturates once a year." And although I am not prepared to say that this is an exact representation of the facts, yet it serves to remind us how much more common it is to meet with obstinate constipation in women than in men. I am inclined to think that the influence of obstinate constipation as one of the causes producing moveable kidney has not up to the present been sufficiently appreciated. Landau believes "the dragging influence of a colon distended with fæces to have some effect on the production of the displacement," but, as far as I have been able to ascertain, no one has discussed how far the straining at stool which so often accompanies habitual constipation may be a cause of the production of a moveable kidney. That it may be so sometimes is well illustrated by the following cases.

CASE 6.—A married woman, aged 48 years, with four grown-up children, frequently consulted me from 1894 onwards for headaches associated with very persistent and obstinate constipation, and I am certain that she then had no abnormality of the kidney. In January, 1899, she came to me and gave the following history. On going to the water-closet one morning she found herself very constipated, and whilst straining she felt a severe pain on the right side and also felt a lump just below the right ribs. The pain was so intense that she had some difficulty in getting back to her bedroom, where she remained for several hours on the bed, the pain gradually passing off. Since that time she had several times felt a "lump below the ribs." I saw her about a week after this attack. I found all the abdominal organs sound with the exception of the right kidney. This was easily felt just below the ribs in the nipple line. It could be moved downwards to the level of the umbilicus and could readily be replaced in its proper position in the right loin. The constipation has since been treated and the kidney has caused no more trouble.

CASE 7.—The patient was a woman, aged 34 years. She had been married for five years and had one child, who was two and a half years old and whom she had suckled for two years. She had not noticed anything the matter and was more or less well up to a month previous to my seeing her, when she had received a nervous shock through a lady opposite her house going "raving mad" and much disturbing her. Her bowels became very constipated, her tongue got furred, and she lost her appetite. 14 days before I saw her she was one morning, shortly after she had had an action of the bowels, suddenly attacked with great pain in the right hip inside. She was also complaining of "pain on the right hip inside" when she came to me. On examination of the abdomen I found that the right kidney was moveable, lying just above the crest of the right ilium, and that it was easily moved up again into the right loin.

It will be remembered that the patient in Case 5 had her bowels as a rule very constipated, that once for nine months she was free from the attacks of pain, &c., during which time she was taking Carlsbad salts every morning, and that after seeing me in 1897 she had no attacks of pain for one year, during which time she had prevented her bowels from being constipated. The patients in Case 1 and in Case 4 also gave histories of constipation and straining at stool shortly before their illnesses commenced. I do not think that this "straining at stool" can be by any means a rare exciting cause of moveable kidney when it can be directly traced in two out of 14 cases and was probably the cause in several others. The point is one of practical utility and I am sure that I have done great good in several of my cases by seeing that the patients attended carefully to the condition of their bowels and prevented any constipation and straining by the use of aperients.

It is, of course, a question whether the habitual constipation of women is not connected with the corsets which they wear, and whether these articles of dress do not therefore predispose to moveable kidney both by producing constipation and by exerting pressure on the upper pole of the kidney, but as far as my experience goes tight-lacing of itself is much more prone to produce displacement of the liver and uterus than of any other organ.

I would call attention also to the fact that in two of these cases the patients were inclined to put down their trouble to bicycling. The patient in Case 2 "had bought a bicycle in 1894, but had ridden it very little as after riding it she always suffered pain in the abdomen of so severe a character that she had to lie flat on the floor until it passed off," and the patient in Case 4 enjoyed very good health up to a year before I saw her, when she possibly overstrained herself in riding 45 miles in one day against the wind on her bicycle. In both these cases, however, there were other causes which were more likely to have produced the displacement of the kidney. It would be worth observing whether moveable kidney is becoming more frequent since ladies have taken to bicyling, and whether bicycling can really be put down as one of the causes of its production. I can quite imagine that riding over a very uneven road might jolt a kidney out of position

if it were already moveable, but I do not think that a normal kidney would be loosened by this form of exercise.

When we come to consider the treatment of moveable kidney we are met with the fact that many patients who are the subjects of this condition get through life with very little inconvenience at all. The displaced kidney seems very often to produce no symptoms as long as it remains quiet in one place. Thus in Case 8 which is that of a single woman, aged 40 years, who has been under my observation at frequent intervals for the past seven years, there are, as a rule, few, if any, symptoms so long as she leads a quiet life and keeps her bowels open. At intervals she has to nurse and to lift an old mother, and this nursing is always attended by severe attacks of pain in the abdomen, and on several occasions after such nursing I have found on examination the position of the kidney to be shifted. If, however, the kidney remains in one position the system seems to become accommodated to the displacement and few symptoms result. I could quote several cases in which a moveable kidney has been under observation for years, causing very few symptoms but occasional indigestion, and requiring neither support nor treatment. One of the first cases (Case 9) of consultation which I had in Exeter 20 years ago was with Mr. A. C. Roper on a case of "floating kidney." The patient was never, and has never been, in robust health, and has always had indigestion, but she has gone through life as well as numerous other weakly women who have their kidneys normally placed.

I think that all cases of moveable kidney suffer more or less at times from indigestion. There seems to be a connexion between certain conditions of the kidney and stomachic disturbance.

I have seen two cases which proved to be those of calculus in the kidney in which the patients had for a long time previously to the passage of the calculus only been thought to suffer from severe and intractable dyspepsia and from this condition only, and I see that Dr. Clifford Allbutt, when enumerating the symptoms of calculus of the kidney, says: "Another symptom which results from transference of nerve influence has reference to the stomach; nausea, vomiting, and dyspepsia are very common not only at the times of actual colic but also during the periods of less acute suffering. These symptoms are explained through the connexion of the pneumogastric with the renal plexus." It seems to be reasonable to suppose that the traction and twisting which a displaced kidney must make on the nerves of the renal plexus would produce indigestion in the same way as does the calculus in the kidney through the connexion of the pneumogastric with the renal plexus. It will, I think, be found that the indigestion associated with moveable kidney is more benefited by aperients and by regulating the bowels than by any other treatment.

In some cases moveable kidney seems to disappear without treatment, the kidney resuming its usual position. This occurred in Case 10.

CASE 10.—The patient, a married woman, aged 45 years, had had five children. In 1889 twins were prematurely born and there were subinvolution and cervicitis of the uterus. She was treated by Dr. L. Atthill in Dublin with much benefit. At this time there was no suspicion of a "loose kidney." Some time in 1892 her husband (a medical friend of mine) was examining her abdomen to discover the cause of sudden attacks of faintness with sickly pain and vomiting from which she was suffering and he discovered an abdominal tumour. The shape and smooth feeling of the kidney were very perceptible and its absence from the left loin was very noticeable, it being, as is unusual, the left kidney which was displaced. The patient was seen by a surgeon who entirely confirmed the diagnosis. A pad with a belt was devised, but the patient could not, or did not, wear it very long. The symptoms gradually subsided and now nothing can be found in the abdomen.

These, then, are the most favourable cases of moveable kidney. In other cases, as I have mentioned in some of those which I have described, the symptoms seem to subside when the patient wears an abdominal belt with an inflatable pad over the region of the kidney in front which keeps the kidney from constantly shifting its position; but in some cases, as in Case 2, this belt is of no avail—the symptoms continue and the patient's life is rendered very miserable, especially when, as in this case, a young person is cut off from dancing, tennis, and all the pleasures which are most enjoyable at her age. In such cases the operation for fixing the kidney should be recommended. I am told by surgeons that it is a very easy and very satisfactory operation and my own very slight experience of it would entirely confirm this view.

Exeter.

THE OPEN-AIR TREATMENT OF PHTHISIS: AN INTERESTING CASE.

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THE following case of pulmonary tuberculosis is published as an interesting example of the benefits to be derived from the open-air method of treatment, accompanied by special feeding, in this country; as a contrast to one of residence in a warm climate unaccompanied by any special line of treatment; and also as an object-lesson in the success that may be attained by appropriate treatment in the climate of this country even when, as in this case, during residence abroad, the disease had progressed and was rapidly nearing a fatal termination.

A young man, aged 24 years, who was the subject of pulmonary tuberculosis, on medical advice went to South Africa in November, 1897. At that time he was stated to be suffering from tuberculous infiltration of the apex of the left lung. He resided for two years at Reddersberg in the Orange Free State, where the climate is described as being fairly equable, and the place as hilly, sheltered, dry, and free from dust. Reddersberg is on the main line to Bloemfontein and is consequently fairly well supplied with the necessaries of life. During the patient's residence at that place he followed the light employment of a bookkeeper, spent a great deal of his time in the open air, and continued to carry out the lines of treatment which had been laid down for him by competent medical advisers at home and abroad. His complaint at first tended to improve but he began gradually to lose ground till in April, 1900, he appeared to be so obviously going down hill that it was decided that he should return to this country and seek for further aid and, if it was possible, amelioration. He accordingly presented himself in May at the out-patient clinique of the North London Hospital for Consumption. On examination the case presented the following noticeable points. The patient's general appearance was that of a person suffering from a rapidly advancing wasting disease. He was thin, pale, and emaciated. His voice was husky and hoarse and only equal to a whisper. He had an incessant cough with copious purulent sputum which on bacteriological examination showed crowds of tubercle bacilli by Gram's, Ziel-Nielssen's, and Honsell's stains. His skin was dry, rough, harsh, and inelastic. There were loss of appetite, pain after food, and frequent vomiting due to cough. His height was 5 ft. 9½ in. and his weight was 8 st. 9 lb. His case was one of mixed infection. On closer examination both lungs were found to be throughout in a condition of actively secreting bronchorrhœa; the apices of both lungs were dull and the left apex was the seat of a vomica below the sternal end of the clavicle. Laryngeal examination showed pyriform swellings and slight ulceration with congestion of the whole larynx, all undoubtedly tuberculous. His temperature ranged from 101° to 102·8° F. daily. His heart sounds were normal, though weak. The pulse was frequent; there were copious night-sweats and clubbing of the fingers, also slight anasarca of the feet. His urine was free from albumin or sugar, but it was loaded with phosphates.

His appearance being so obviously serious and as he needed immediate care and nursing, it was deemed advisable that whilst waiting for a vacant bed he should be sent into a general hospital as an in-patient. After residence in such an institution for a fortnight, during which time he made no favourable progress, he was removed to his home by his friends; here he continued to reside during the space of five weeks, during which time he carried out as best he could

the instructions which had been given to him for the application of the open-air methods. At the end of this period he had so far improved and was so much better, having gained five pounds in weight, that he appeared to be a more suitable case for treatment at Mount Vernon, Hampstead. He was therefore admitted into that institution on July 25th, 1900, when he weighed 9 st., and here he continued to reside and to enjoy the open-air treatment with appropriate remedies and diet under the care of Dr. B. O'Connor until Sept. 27th, when he left weighing 9 st. 12 lb.

The patient was now so much improved in health that when he presented himself for examination at the out-patient clinique in Fitzroy-square in October he was unrecognisable as the same patient. His appearance was that of a fairly nourished young adult. His voice was strong with the merest suspicion of huskiness, the laryngeal affection having markedly subsided under the care of Mr. R. Lake. His cough and night-sweats had disappeared and the bronchorrhœa had dried up, the only remaining signs being in the apices. The right apex had markedly cleared up, though the breath sounds were still harsh and the left apex showed fibroid thickening with the original vomica. There were very few bacilli in the sputum. His skin was now moist, oily, supple, and elastic, with some subcutaneous fat and a decided pinkness of hue. He expressed himself as never having felt better in his life, and his spirits and bearing conveyed that impression. At the present date he continues to attend the out-patient clinique and he carries out the principles of the open-air treatment at home in the country near London. His weight is now 10 st. and he continues to improve in every particular.

This case is a good example of the prompt abatement and arrest of symptoms tending at one time to indicate a rapid progress towards a fatal termination. Although it is yet somewhat early to speak of "cure," yet from the progress of the case and its present condition there seem to be substantial grounds for much hope, as the patient appears to have now an excellent chance of recovery, which he certainly had not before the open-air treatment was adopted. The case is put on record as a sufficiently striking example, among many others, of the benefits of the open-air treatment of tuberculosis. At this time information as to the results of this method may be valuable and helpful to others who may desire assistance in deciding upon a line of procedure in suitable cases.

SOUTH AFRICAN HORSE-SICKNESS: ITS PATHOLOGY AND METHODS OF PROTECTIVE INOCULATION.[1]

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THIS disease, so far as is known, is peculiar to South Africa. While affecting the Transvaal and Rhodesia every year—beginning about the end of October and continuing until the following May or even later—it only affects the Cape Colony and Natal in an epizootic form in certain years, although sporadic cases occur annually in certain localities. It affects horses, asses, mules, and it has been asserted—although I have never seen such cases—that quaggas have also been killed by it. A disease which occurs to a limited extent among cattle, called by the natives "imapunga," and one which exists as a widespread plague among high-bred sheep and goats in the eastern province of Cape Colony, are each closely related in their pathology with this malady. The most dangerous areas infected by the disease are those which are relatively low-lying—independently of the absolute altitude of the district.

Period of infection.—It has been commonly observed that where animals during a season of sickness are not permitted to graze after sunset and before the sun has dried up the dew from the herbage they do not so commonly become affected as where such a routine is not carried out. Horses which are stabled during the night are, as a rule, safe, but during last year 60 per cent. of the stabled horses in Eshowe, Zululand, died from this sickness. Veterinary-Lieutenant Coley, A.V.D., who kindly made the observations for me, stated that these horses were mainly fed on Guinea or Ubaaba grass mixed with forage or Indian corn. This grass was usually cut in the evenings and made into bundles till next day. Those who took particular care to have the grass thoroughly dried in the sun before using it did not lose their horses, while those who neglected this precaution lost heavily. The disease is only directly contagious; for while inoculated horses have died in my stables among clean animals I have never found, during observations extending over seven years, a single case of infection from such a source. The annual mortality in Rhodesia and the low-lying parts of the Transvaal amounts to over 90 per cent. Animals which have recovered from the sickness are termed "salted," and are increased from six to ten times in market value. Animals which are "salted" are liable to subsequent attacks of fever which have no necessary relation to fresh infection. I have observed numerous cases of this description among the "salted" animals under my observation and during periods when the sickness was unknown.

Symptoms of the disease.—The disease occurs under two forms—the "dikkopziekte"[2] and the "dunpaardeziekte."[3] In the former the head and neck swell up enormously, thus affording trustworthy indications of illness during life. In the latter form, as a rule, no symptoms appear until close to the period of death, when the animal becomes subject to very rapid breathing with heaving at the flanks. At the moment of death, in both forms, it is common to find a huge cloud of white foam ejected from the mouth and nose. This foam is produced from a free exudation of blood plasma into the air-passages. Owing to the fact that the animals suffering from the "dunpaardeziekte" show no symptoms until toward the end of the period of illness, it had come to be believed that the whole period of the disease was limited to a few hours' duration.

Post-mortem phenomena.—The pericardium is almost invariably filled with a yellow fluid which, while usually clear, is sometimes blood-stained. Solidified gelatinous exudate is frequently found in relation to the beginning of the aorta. The pleural cavity is frequently occupied by yellow fluid and the interlobular and sub-pleural tissues are also frequently distended by this material. The interlobular tissue is frequently so distended by exudation that the lung tissue proper is dissected up in all directions. The subcutaneous tissue, especially about the great vessels in the neck, is commonly found to be invaded by this exudation, while in the "dikkopziekte" the swelling of the head and neck is due to this effusion. The yellow fluid of the pericardium and the pleuræ is spontaneously coagulable in the presence of minute traces of blood. These represent the more characteristic pathological conditions obtaining in this disease, among which one characteristic is most noticeable by its absence—e.g., inflammatory phenomena. Pathological phenomena are, therefore, for the most part to be ascribed to the marvellous exudation of blood plasma which, while seen more or less throughout the serous and subcutaneous tissues, is best marked within the thoracic cavity. In my annual reports as Director of the Colonial Bacteriological Institute I have referred to the morbid anatomy in greater detail.

INOCULATION EXPERIMENTS.

For the purpose of conveying to healthy animals the infection from those already sick three materials have been made use of—viz., (1) the yellow fluid from the trachea of infected animals; (2) the yellow fluid from the pericardium of infected animals; and (3) the blood of infected animals. The use of the first two fluids has not always been successful in setting up the disease, but fresh virulent blood has invariably proved successful. The methods of use of the materials mentioned are: by subcutaneous injection; by the insertion of a seton, impregnated with the fluid, under the skin; and by drenching—e.g., giving a dose by the mouth. The sites selected are: directly into the lung tissue by hypodermic needle operating through the skin over an intercostal space; into the subcutaneous tissue of the neck; into the subcutaneous tissue of the flank; and intravenously. Any one of the channels selected is equally suitable, but the incubation period is somewhat shorter when the intravenous method is used. When the malady is induced by the inoculation of two or three cubic centimetres of the blood of an

[1] A paper communicated to the Royal Society for the author by Sir David Gill, F.R.S., on August 20th, 1900.

[2] Dikkopziekte, a Dutch word signifying "thick-head sickness," is applied to the form in which the swollen head is the most obvious symptom.

[3] Dunpaardeziekte, "thin horse-sickness," applied to the form in which the head is little or not at all swollen.

animal which has died from spontaneous disease, a mean period of from eight to nine days supervenes, after which the temperature begins to rise. The elevation is gradual, with remissions during the night, but it attains to 106° F., as a rule, before death, which usually occurs after four or five days of fever.

After having transmitted the disease through a succession of animals I found it possible to preserve its virulence unimpaired through a long period of time. I bleed the animals into bottles which hold 800 cubic centimetres of fluid. These bottles are prepared by placing in them 50 cubic centimetres of a 10 per cent. solution of neutral citrate of potash and plugging the necks with cotton wool. Such bottles are sterilised in the autoclave previously to use. After being filled with blood the influence of the citrate arrests coagulation and the corpuscular matter soon subsides, leaving the more or less clear plasma above. The latter is drawn off to half the original bulk and is replaced by a 50 per cent. solution of glycerine and water, containing 0·25 per cent. of pure carbolic acid. Such a mixture preserves its virulence quite unimpaired for over two years. One cubic centimetre of this material serves to induce the disease in its characteristic form, but if the dose is increased to three or five cubic centimetres the period of incubation is shortened and the post-mortem phenomena are less characteristic.

From the observations which I have made I have found that the subcutaneous injection of fresh or properly preserved horse-sickness blood produces symptoms during life, and shows pathological changes after death which are not to be distinguished from those found in the spontaneously occurring cases of the lung form of the disease. It is somewhat remarkable that the only cases in which I have succeeded in producing the "dikkop" form were those in which the virus which was used was somewhat septic. When, however, I have inoculated virulent preserved blood into partially protected animals I have in a number of cases, although not in all, produced this form. In three cases where the virus used has been sufficiently attenuated not to produce death but a longer febrile period than is found in the fatal cases, I have also seen the "dikkop" form produced.

Citrated blood dried in a thick layer was rendered non-virulent. Where, however, such blood was rapidly dried on glass plates in very thin layers it was found when two grammes were dissolved in salt solution and injected into horses that it produced fever, but not in a virulent form. The fever thus induced gave practically no protection against a dose of virulent blood at a subsequent date. Mild attacks of horse-sickness do not, however, give such protection as is required to resist virulent blood.

Experiments made in regard to protective inoculation.—The yellow fluid from the pericardium of an animal which had died from the disease was filtered through a Pasteur filter. 100 cubic centimetres of the filtrate were injected subcutaneously into a horse. 11 days later it was inoculated with three cubic centimetres of preserved blood injected subcutaneously. The result, which culminated in death from ordinary horse-sickness, showed that no protective influence had been exerted by the filtered fluid.

Calomel in doses of from 30 to 60 grains daily had the effect of retarding death, and the blood of such animals drawn at periods later than that at which death usually occurs was distinctly weakened in virulence. Such blood has on several occasions, though not on all, induced attacks of the disease from which the animals not only recovered but acquired protection against virulent blood injected subsequently.

Transference of the disease to other animals.—The subcutaneous or intravenous inoculation of donkeys with fresh virulent blood is followed by fever. The period of onset is irregular and uncertain, while the duration of the febrile period varies from one or two days to in my experience, a week or more. The amount of the virus used has some relation to the severity of the fever, but the special susceptibility of the animal is the principal factor in determining the degree and duration of the fever. Two donkeys, equal in age, were inoculated respectively with one cubic centimetre and 50 cubic centimetres of the same blood. In both cases a moderately severe reaction followed, and while the animal which had received the injection of 50 cubic centimetres was rather more severely affected than the other, the difference on the whole was but slight. In all I have inoculated 12 donkeys, and, while none died, the difference in susceptibility was most clearly demonstrated, some scarcely showing any reaction at all.

The susceptibility of cattle to the inoculated disease is excessively variable. I have inoculated 21 cattle. A definite febrile action was produced in seven cases, and four of the animals died. In the case of one which died, and in which the symptoms produced were quite characteristic of those found in horses, the inoculation of its blood into a clean horse was followed by the usual period of incubation, the onset of fever, and death from characteristic horse-sickness. The disease known as "imapunga," which occurs to a limited extent among cattle, presents features which in every respect are identical with those produced in susceptible cattle by the inoculation of virulent blood taken from animals suffering from horse-sickness.

Angora goats are also to a limited extent susceptible to horse-sickness infection. Of 17 which were inoculated a febrile reaction occurred in 10; none died. From one of the 10 blood was taken, which was used to inoculate an ox. The latter animal developed fever, and died with exactly similar symptoms during life, and showed the same post-mortem conditions as the ox already referred to, the blood of which, when inoculated into a horse, produced characteristic horse-sickness.

Sheep are also susceptible. Of 10 sheep which were inoculated six showed a well-marked febrile reaction, but none died. I have not succeeded in transferring the disease to rabbits, guinea-pigs, rats, or mice.

The transmission of the disease for protective inoculation by means of the inoculation of fresh blood.—The inoculation of horses with the blood of donkeys which were suffering from fever produced by inoculation has been attended with most varying results. In some cases death has been produced, in some an irregular febrile period, and in others no apparent result has followed. The period of onset of the fever has likewise been most variable. In some cases a reaction has been set up corresponding to the normal period of incubation which obtains in horse-sickness, while in other cases reaction has been delayed for more than 25 days.

Where fever has set in on or about the eighth day, has been moderately severe in degree and duration, and has subsequently subsided, a very definite degree of protection has been produced, although seldom high enough to set up such a resistance as to oppose death when the animal was subsequently inoculated with virulent blood.

A striking demonstration of variable susceptibility among horses was furnished during these experiments. Of three horses and one mule which were each inoculated subcutaneously with five cubic centimetres of fresh blood the mule had no reaction, two horses had scarcely any reaction, and one horse had a good reaction. In the case of the last horse when subsequently inoculated with virulent blood it suffered severely and just managed to recover. The others had not been protected to any appreciable degree. Obviously, therefore, the susceptibility of the last animal had been such as to admit of infection from the blood of the donkey producing reaction and the establishment of protection, whereas the higher degree of insusceptibility of the other animals resisted infection and in this way evaded the onset of protection. This phenomenon forms the greatest barrier to protective inoculation, and has contributed to the enormous trouble which I have experienced in devising a practical method of protective inoculation. The fresh infected blood of cattle, sheep, and goats is still more variable in its results than is that obtained from the donkey. Numerous other experiments of the same nature have been made all of which result in showing that donkeys, oxen, goats, and sheep possess a very irregular susceptibility to the disease; that the blood of donkeys which do not react may produce no effect when inoculated into the horse; that the blood of donkeys which have evinced moderate reaction may produce intense reaction in some horses and practically none in others; and that a mild reaction in the donkey furnishes no definite assurance as regards the reaction which its blood may set up in horses.

Owing to the variable quality of the infection possessed by infected blood of the donkey in the fresh state I experimented with blood taken from donkeys and oxen which, after

having been received, was preserved in the manner already described. A large number of experiments carried out by this means furnished the following results. 1. Protection was only obtained where a definite amount of fever had been produced on several occasions, but unless the reaction was severe the animal did not resist the inoculation of one cubic centimetre of preserved virulent blood at a later period. 2. The susceptibility of horses to such a weakened or attenuated virus varies enormously. Of two animals inoculated with the same dose of the same virus injected directly into the jugular vein one had good reaction and the other very feeble reaction. Neither were found to be protected when subsequently inoculated with virulent blood. One inoculated with the same amount of the same preserved material two months later died from the primary inoculation, thus showing that even the attenuated virus can be satisfactorily preserved for a considerable period of time. In the case of another animal which was inoculated intravenously with this virus no result followed; 15 days later the same inoculation was repeated. The temperature began to be elevated on the fourteenth day and the animal died from horse-sickness seven days later. The primary inoculation in this case, while being ineffectual to induce the disease, had evidently lowered the susceptibility, so that a fresh stimulus by the same virus was sufficient to overcome the resistance entirely. Having recognised that the blood of animals which lived beyond the ordinary period at which horses usually die from horse-sickness was lowered in virulence, I determined to attempt to produce this change *in vitro*. Having, therefore, prepared bottles containing citrate solution and having thoroughly sterilised them selected animals were bled under the most rigid aseptic management and the blood was received in the bottles, which after being re-plugged were incubated at a temperature of 102° F. during 10 days. In one such experiment out of a total of 14 bottles 13 remained perfectly free from extraneous organisms. Such blood after incubation was then preserved and tested. I found that in this manner it was possible to produce an attenuated virus equally suitable for inoculation as that obtained from the donkey or the ox. While, however, these experiments demonstrated that it was possible to protect horses by repeated inoculations of an attenuated virus they equally demonstrated the irregularity of action, owing to the varying susceptibility to the disease in its attenuated form which obtains among horses. Several important facts, however, which were elucidated are deserving of careful consideration—viz., death in cases of horse-sickness cannot directly be ascribed to hyperpyrexia, inasmuch as several horses have recovered after having experienced temperatures of over 107°, while others which have died, and in which characteristic lesions have been found, have not had a temperature exceeding 105°. Protection can be arrived at without the production of very great reaction provided that a number of inoculations are made into the animal, and that these have been so arranged as to proceed very gradually to the highest degree of virulence. 3. It is exceedingly difficult to determine the exact degree of attenuation in any particular sample of an attenuated virus. I have usually attempted this by the inoculation of the virus into one or, at most, two horses; but if the susceptibility of such animals happens to be of a low grade, then the reaction produced may not obtain in other horses for which it may subsequently be used. In other words, to determine exactly the strength of an attenuated virus, it would be necessary always to make the test on at least five animals. 4. The indication for future experimentation was thus to call for the discovery of some method by which a virus of standard virulence might be, at will, reduced to any required degree of attenuation.

Experiments were also made to determine whether the blood of an animal suffering from "secondary" fever had any infective property. To this end animals under "secondary" fever, with temperature as high as 106°, were bled and the blood was used to inoculate clean animals, but in no case was any reaction produced thereby. I therefore am convinced that the blood during "secondary" fever is non-infective.

Experiments with serum and defibrinated blood of animals which have recovered from horse-sickness.—The experiments made have included serum derived from (1) animals formerly "salted"; (2) animals formerly "salted" and subsequently re-inoculated by periodical injections of gradually increasing doses of virulent blood, the maximum dose being 1000 cubic centimetres; and (3) animals treated as in Clause 2, but subsequently permitted to rest for several months and then re-inoculated with a small dose (five cubic centimetres) of virulent blood. Under Clause 1 serum was obtained from a well "salted" animal which had 12 days previously to bleeding been inoculated with five cubic centimetres of preserved virulent blood. Animals which were inoculated with two cubic centimetres of virulent blood were subsequently inoculated with large doses of serum (100 cubic centimetres or more). The inoculations, in some cases, began on the day that virulent blood was injected; in others it was delayed until the temperature began to rise, but although the total amounts given exceeded 1000 cubic centimetres, no definite interference with the course of the disease was noticeable. Under Clause 2 "salted" animals were inoculated with progressively increasing doses of virulent blood. When these animals had been inoculated with doses of virulent blood equal to 1000 cubic centimetres they were allowed to rest for from eight to 12 days, after which they were bled. Of this serum, 500 cubic centimetres were inoculated at one dose into a horse, which, during 33 subsequent days, manifested no signs of illness due to the inoculation. When this period was completed, it was inoculated with virulent virus and as a result died from characteristic horse-sickness. No evidence was shown that the serum had in any way interfered with the action of the virus. Where, however, this serum was used to inoculate animals which were already infected a very curious change in the character of the disease occurred. The animals became affected, usually in 36 hours, with hæmoglobinuria, which later passed into hæmaturia and ended invariably fatally, if the disease was virulent. In two cases, however, in which the disease had been induced by an attenuated virus the hæmaturia came to an end with the subsidence of the fever. In all, this curious condition was produced by serum in 19 cases.

Where animals were bled into citrate solution the plasma was of a yellow colour, but in cases which eventually became the subjects of hæmaturia I noticed if the animals were bled about 24 hours previously to the onset of this condition that the plasma was red-coloured. It is therefore evident that the condition has its origin in the blood. In several cases animals, which were partially protected, became subject in a slighter degree to this complication, if they were re-inoculated with virulent blood and were unable to resist it. This blackwater may have some relation to the blackwater fever in man. It is generally believed in Rhodesia that blackwater does not occur as a primary disorder, but only supervenes in persons who have previously been the victims of malarial fever. It seemed to me that this serum might in some way be associated with a residual infection. To determine this I inoculated a "salted" horse, which had also had repeated large injections of virulent blood, with 50 cubic centimetres of fresh blood. I bled it eight days later and with five cubic centimetres of its blood I inoculated a clean animal which thereafter had a very slight rise of temperature on the eighth day. An animal similarly treated was finally inoculated with 300 cubic centimetres injected intravenously and 20 cubic centimetres subcutaneously 39 days previously to being bled. When bled the blood was defibrinated and 100 cubic centimetres were injected into each one of six animals. No evidence was shown of any infectivity of the blood. I now determined to make use of the serum from animals which, under Clause 3, had been allowed to rest for periods over one month previously to the collection of their serum. This serum is that which is now being used for the purpose of protective inoculation. I have determined with regard to it that it possesses no curative action which in practice would be of any avail to restrain the course of the disease; that since an injection of 100 cubic centimetres into one animal has absolutely no effect in restraining the action of one cubic centimetre of ordinary preserved virus inoculated subcutaneously on the other side it does not possess any immunising power which would be of practical value in withstanding infection; and that its germicidal activity is extremely weak, as is shown by the following experiments. 1. One cubic centimetre of fresh virulent blood was mixed with 100 cubic centimetres of serum, and after being kept for 24 hours in the ice chest it was inoculated into a clean horse. The animal had a sharp febrile reaction. 2. Another animal was treated in the same way, but the serum and blood were injected immediately after being mixed. This animal also had a reaction, but a less severe one than did the former. Variation of

susceptibility must, of course, be taken into account, and, in order to establish this conclusion satisfactorily, a considerable number of animals would require to have been simultaneously dealt with. 3. Equal volumes of serum and preserved blood were mixed and kept at ordinary room temperature for four days. Of this mixture, 2·5 cubic centimetres were injected subcutaneously into a clean animal. Fever set in after the usual period of incubation, pursued its characteristic course, and the animal died under circumstances and in the usual time which obtains after the use of pure virulent blood.

Since one cubic centimetre of virulent blood mixed with 100 cubic centimetres of serum produced a sharp febrile reaction in one animal but had practically no effect in some others, and since one cubic centimetre of blood and 200 cubic centimetres of serum produced a reaction in another animal, it was clear that under this method also I should have to meet differences of animal susceptibility. It was so far fortunate that preserved virulent blood acted equally well as fresh blood, so that a standard virus is easily prepared and maintained, and by mixing the serum of a considerable number of animals I am able to standardise a large volume of serum. I concluded, therefore, to determine the amount of serum which, when mixed with a definite amount of blood, would serve, acting in concert with the natural protective bodies in the system of the average horse, to insure the production of the modified disease. After 14 days should have elapsed subsequently to this inoculation, provided a severe reaction was not set up, I intended to re-inoculate with the same dose of virulent blood, but with a much reduced quantity of serum. Again, after 14 days, the procedure should be repeated, the dose of virulent blood remaining a constant quantity, but the dose of serum being still further reduced. Finally, I intended to inoculate with virulent blood by itself. In the first three series of experiments 16 horses were used. These were inoculated as follows. First inoculation: one cubic centimetre of virus and 100 cubic centimetres of serum (10 animals); one cubic centimetre of virus and 90 cubic centimetres of serum (four animals); and 0·5 cubic centimetre of virus and 50 cubic centimetres of serum (two animals). Second inoculation: 0·5 cubic centimetre of virus in 30 cubic centimetres of serum. Third inoculation: 0·5 cubic centimetre of virus in 15 cubic centimetres of serum.[4] Fourth inoculation: 0·5 cubic centimetre of pure preserved virulent blood. The following shows the results obtained and where the remark "salted" is made it is to be understood that the animal at later dates withstood enormous doses of the most virulent blood:—

Animal.	Reaction.	Result.
First... ...	No reaction at all.	Salted.
Second ...	Reaction to the first inoculation only.	,,
Third ...	No reaction.	,,
Fourth ...	Slight reaction after all four inoculations.	,,
Fifth ...	Reaction to the fourth inoculation.	Died.
Sixth ...	Slight reaction to the first inoculation.	,,
Seventh ...	No reaction.	Salted.
Eighth ...	Reaction to the fourth inoculation.	Died.
Ninth ...	Slight reaction to the third inoculation; after the fifth inoculation.	,,
Tenth ...	Slight reaction to the fourth inoculation.	Salted.
Eleventh...	Slight reaction to the fourth inoculation.	,,
Twelfth ...	Reaction to the fifth inoculation.	Died.
Thirteenth	No reaction.	Salted.
Fourteenth	Reaction to the fifth inoculation.	,,
Fifteenth	Reaction to the fourth inoculation.	,,
Sixteenth	Reaction to the fourth inoculation.	,,

In the next experiment seven animals were used, which were inoculated as follows:—First inoculation: one cubic centimetre of virus and 100 cubic centimetres of serum. Second inoculation: 0·5 cubic centimetre of virus and 25 cubic centimetres of serum. Third inoculation: 0·5 cubic centimetre of virus and 10 cubic centimetres of serum. Fourth inoculation: 0·5 cubic centimetre of virus and 1·5 cubic centimetres of serum.[5] The results were as follows:—

Animal.	Reaction.	Result.
First	Slight reaction to the fifth inoculation.	Salted.
Second ...	Slight reaction to the third and fifth inoculations.	,,
Third... ...	No reaction to the fourth inoculation.	After a large dose of pure virus, died.
Fourth ...	Slight reaction to the second inoculation.	Salted.
Fifth	No reaction to the fourth inoculation.	After a large dose of pure virus, died.
Sixth	Slight reaction to the second inoculation.	Salted.
Seventh ...	Slight reaction to the third inoculation.	,,

Note.—Where "fifth" inoculation is mentioned it refers to a dose of pure virulent blood.

The total number of animals inoculated was 23. The number of animals that died was nine, while the "salted" animals numbered 14.

The tests thus applied have been of the most severe character, and despite the fact that these are only of the value of preliminary experiments the results are extremely satisfactory. Obviously animals have been sacrificed which, under altered methods, might have been saved, for the outcome of these inoculations goes to show that, unless some reaction has been produced during the earlier reactions, there is no certainty that an animal is protected. Nevertheless it is equally proved that some have become highly protected without having shown any reaction at all. The indication, therefore, has been to increase the dose of the virus used in the primary inoculations, even at some risk to the more susceptible animals. In a subsequent series of animals this has been carried out in the following manner:—First inoculation: two cubic centimetres of virus and 50 cubic centimetres of serum; second inoculation: two cubic centimetres of virus and 20 cubic centimetres of serum. 12 animals have been simultaneously inoculated in this manner. The reactions produced have been as follows:—

Animal.	First inoculation.	Second inoculation.
First ...	None.	None.
Second...	Slight.	Slight.
Third ...	,,	,,
Fourth...	,,	Severe.
Fifth ...	,,	None.
Sixth ...	,,	,,
Seventh	Severe.	Slight.
Eighth...	Slight.	,,
Ninth ...	None.	,,
Tenth ...	Slight.	,,
Eleventh	,,	None.
Twelfth	,,	Severe.

Since one animal, after the first inoculation, had a severe reaction, it is evident that the limit of strength, consistent with safety, had been reached. The reactions, in the two cases, after the second, were extremely severe, and indicate that the limit of strength of virus for that inoculation had been slightly exceeded if a widespread scheme of operation had been intended to be carried out among animals in the open.

These results would seem to indicate that fortified serum—e.g., that obtained from animals which, after "salting," have been re-inoculated with large doses of virus—exerts a peculiar and definite action on the virus. While, however, 100 cubic centimetres of serum suffice to prevent one cubic centimetre of virulent blood, when mixed with it, from producing any great elevation of temperature, I have referred to a case in which a severe reaction was produced. Since, in another case, 200 cubic centimetres of the same serum, with an equal amount of virulent blood, were followed by a reaction and a definite amount of protection, it is evident that the difference in susceptibility between the latter animal and

[4] A slight variation of the quantities was made in several cases in the second and third inoculations.

[5] Two had 0·5 cubic centimetre of pure virus.

those which react slightly after 100 cubic centimetres of serum and one cubic centimetre of virulent blood is equal to 100 cubic centimetres of fortified serum. Moreover, as already shown, when the virus is attenuated by its passage through less susceptible animals, such as the donkey or the cow, its effect, when used in the same dose, either by subcutaneous or intravenous injection, varies very greatly in different animals; in some producing no evident reaction, in others setting up some fever, while again in others its use was followed by the onset of the virulent disease resulting in death. If, therefore, the admixture of serum with virulent blood is followed on inoculation merely by a modified form of the disease it must be concluded that the serum of itself cannot be credited with this result, but that a peculiar quality existing in the animal body and varying in amount from animal to animal must play an important part. Whether this principle is a simple body or is a combination of several bodies cannot at this moment be determined, but for convenience' sake I would suggest that the name "antagones" should be applied to it. The term need not be taken to imply either an antitoxic or a germicidal body, but merely to denote the "defensive" properties which are already existent to a greater or less degree in all animals, or are produced or increased under special stimulation. Since thoroughly "salted" animals and donkeys can be re-inoculated and infection proved to exist in their blood for at least 10 days subsequently, I am inclined to look upon the protection existing in "salted" animals as of the nature of a "tolerance," and to believe that true immunity in horses against this disease is never acquired.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

PERFORATING SHELL WOUND OF THE LEFT CHEST APPARENTLY HEALED; ACUTE STRANGULATED DIAPHRAGMATIC HERNIA; LAPAROTOMY; DEATH.

BY WILLIAM EDWARD HOME,
STAFF-SURGEON R.N.

ON Oct. 28th it was reported to me that a man had been suffering for two days from constipation and colic and that he had been under treatment unrelieved for 26 hours, and I was asked to see him. It soon became clear that he was suffering from acute intestinal obstruction. The localising signs and symptoms were incorrectly interpreted and I believed that the trouble would be found to be in the right iliac fossa. I performed laparotomy, but failed to find the obstruction. The patient died on the 30th. A post-mortem examination on the next morning showed that the left lung was collapsed into the upper part of the left chest, while nearly the whole of that side was occupied by the omentum and a large knuckle of the transverse colon which had escaped from the abdomen through a slit in the diaphragm with its edges rounded, not new cut, and adherent generally to the omentum. I would note that the man lay sometimes on the injured side, but generally he sat up in bed, and he never lay down towards the end. I suppose this position relaxed the edges of the slit. The patient had been wounded at Tientsin four and a half months before by a fragment of shell which penetrated the chest and (as I was told afterwards by a friend) had not been removed. The wound was in the præcordia and had certainly penetrated the lung and probably, also, I submit, the diaphragm, the lesion in which had not healed. The external wounds were reported to be healed two and a half months before. He made almost no complaint to us, and, indeed, I had mistakenly supposed him to be well and had never at all associated the colic with his wound. That others may be warned of the risks which may attend even those wounds which are said to be healed I desire to put this case on record.

H.M. Transport *Jelunga*, Suez.

TWO CASES OF EFFUSION INTO THE SAC OF THE PERICARDIUM, WITH FATAL TERMINATION IN 24 HOURS.

BY FREDERICK WILSON, M.B., C.M. EDIN.

CASE 1.—A young married man, aged 35 years, fell into a river on Dec. 25th, 1899, but felt no ill effects from his immersion till the afternoon of the 28th, when he complained of a stitch underneath his heart and difficulty in breathing. After he had taken a little brandy this went off and he felt better, but not feeling "up to the mark" he went to bed early. About midnight he complained of great pain in the region of the heart and difficult breathing. A medical man was sent for at once, but having some distance to go he was too late, for the young man had expired before his arrival. The patient had, it seemed, become unconscious directly the messenger had departed, and he never regained consciousness. A necropsy was performed on the next day when all the organs were found to be perfectly healthy except for the presence of a little pleurisy on the left side, and when the sac of the heart was opened there was found fully a pint of fluid. In this case there was no opportunity for making a diagnosis.

CASE 2.—A young man, aged 20 years, had been enjoying himself on the morning of his birthday. He had then gone home and had partaken of a very heavy meal. His employment being a miner on the night shift, he went to bed and slept soundly till the time came for him to go to his work. On the evening of Nov. 5th, 1900, he went to work. He did not then complain of illness, but while in the pit he felt sick and had a little vomiting. Nevertheless, he went on with his work all night. When he came up to the surface on the morning of the 6th he was again sick, and when he got home, after taking some tea he vomited again. He then felt better and went to bed. On the same afternoon he became unconscious, but his mother having gone away for a fortnight's holiday assistance was not sought till 10.30 P.M. When I arrived I found him lying unconscious, gasping for breath, and sweating profusely. On careful examination I could find nothing to account for the unconsciousness, and as it was late and I had been informed about the drinking on the previous day I told his friends to keep him warm and to watch him till the morning, when I would look in early. To my surprise I found him on the morning of the 7th pulseless and evidently dying. He was still unconscious but his breathing was easier. I called in another medical man, but we discovered nothing to account for the symptoms which were present. The patient was in such a precarious condition that we did not think it advisable to turn him over to examine him thoroughly, and the omission to do so was, I think, in this case quite justifiable. The patient died on the same evening and I performed a necropsy on the afternoon of the 8th, when I found all the organs of the body healthy except that there was a little pleurisy on the left side, and on opening the pericardial sac I found about a pint of fluid.

Newtown, North Wales.

A CASE OF SPONTANEOUS EVOLUTION IN ARM PRESENTATION.

BY J. BELL, L.R.C.P. LOND., M.R.C.S. ENG.,
ACTING PRINCIPAL CIVIL MEDICAL OFFICER, GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

SPONTANEOUS evolution in arm presentation being rare the following case may be of interest.

A Chinese female, aged 28 years, was admitted to the Government Maternity Hospital having been in labour for 24 hours. The left hand and arm were presenting and were quite black. I was immediately sent for and I saw the patient about 15 minutes after receiving the summons when I found that the labour had terminated naturally. The nurse told me that there was a severe pain and then the head came down followed by the body. The child was at full term and was dead. It was a small child, but was unfortunately not weighed. The mother has had three other children; she was 5 ft. 1 in. in height and weighed 7 st. 9 lb., being about the average height and weight of women of her class.

Hong-Kong.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LEEDS GENERAL INFIRMARY.

TWO UNUSUAL CASES OF INTUSSUSCEPTION.

(Under the care of Mr. LAWFORD KNAGGS.)

IT is only within recent years that laparotomy has been considered admissible in the treatment of intussusception, but a few cases are on record in which this operation was performed with success even in pre-antiseptic days. Such a case was recorded in 1835 by Dr. J. R. Wilson[1] of Mississippi; but none of these cases occurred in infants, in whom shock after abdominal operations is so very marked. Laparotomy was, however, recommended many centuries ago by Praxagoras. Though it is true that inflation or injection may be followed by recovery in a certain proportion of cases, as among the 103 cases collected by Dr. F. H. Wiggin[2] of New York there were 16 recoveries with this treatment, but in the same series there were 23 deaths in cases in which inflation or injection had been employed. After laparotomy 21 patients recovered and 43 died, but in most of the fatal cases injection or inflation had previously been employed in vain. In the former of Mr. Lawford Knaggs's cases recorded below, the very youthful age of the patient, three months and a half, was greatly against success, though recovery has occurred at a very slightly greater age, as in a case under the care of Mr. E. W. Roughton[3] in which the age was four months. An early record of a retrograde intussusception is that described by Spry.[4] One of the most curious suggestions for the treatment of intussusception is that made by John Hunter, who recommended emetics, as he thought that the reversed peristalsis supposed to occur in vomiting might draw out the prolapsed bowel. For the notes of Case 2 we are indebted to Dr. C. H. Greenwood, house surgeon.

CASE 1. *A double intussusception; laparotomy; reduction; death.*—A female child, aged three months and two weeks, was admitted into the Leeds General Infirmary on August 6th, 1899, suffering from an intussusception. The symptoms were the usual ones—viz., vomiting, blood-stained slimy evacuations, and a tumour in the left iliac region. The two former had been present for six days. The apex of an intussusception could be felt in the rectum two inches from the anus. Two days before admission "the seat" had come down, and after three or four minutes went back by itself. This was the only occasion on which this had happened. The patient's general condition seemed to be fair.

The case was at once handed over by Dr. A. G. Barrs for surgical treatment, and soon after admission the patient was anæsthetised and the abdomen was opened. The reduction of the intussusception was begun from the lower end within the abdomen. The apex was gradually pushed up until the empty rectum could be brought into the wound, but it was soon discovered that no real progress was being made. The tumour was therefore brought outside. It was then found that a retrograde and secondary intussusception was present. This had formed from a folding downwards of a portion of the outer layer of the primary intussusception. Its length was between four and five inches, and its neck showed as a ring of pale gut encircling the tumour firmly about its middle (A). Reduction of the retrograde invagination was commenced from above. Its accomplishment was easy at first, but there was considerable difficulty in unfolding the last three-quarters of an inch owing to the swelling that had taken place at the apex (B). When the ascending invagination had been unrolled the primary one was dealt with, reduction being readily accomplished from below in the usual way. The ileo-cæcal valve was the presenting part and was the most difficult to reduce. On examining the bowel before closing the abdomen the peritoneal covering was found to be the subject of many longitudinal splits, and there were considerable thickening and a good deal of local peritonitis about those portions of the bowel that had formed the apices

SI, Small intestine. A, Neck of secondary intussusception. B, Apex of secondary intussusception. C, Ileo-cæcal valve. V, Anus.

of the primary and secondary invaginations. The child died suddenly four hours after the operation during an act of vomiting when apparently she had rallied satisfactorily and was going on well.

CASE 2. *Enteric intussusception caused by an intestinal lipoma; laparotomy; reduction; removal of tumour; recovery.*—A woman, aged 29 years, was admitted into the Leeds General Infirmary on April 16th for symptoms of intestinal obstruction. Her illness had begun suddenly five weeks before with intense pain in the left iliac region accompanied by diarrhœa and vomiting. This subsided, but from that time she had "bilious attacks" with vomiting every other day. About 10 days before admission she became much worse and a medical man was called in. She was very bad with vomiting, diarrhœa, and pain on April 13th, was about her work on the 14th, and bad again the day before admission. Her motions had contained slime and a tarry-looking substance.

On examining the abdomen the left rectus was at once noticed to be more prominent than the right, and at times was raised markedly above the general surface of the parietes. On manipulation a large elongated tumour could be felt extending from several inches above the umbilicus down into the pelvis. It was covered chiefly by the left rectus and when palpated it became hard and more defined and the seat of pain, and these changes were accompanied by gurgling. The tumour was not tender and the resonance over it was impaired. On rectal examination what was thought to be the apex of an intussusception was readily felt through an intervening fold of mucous membrane.

On April 17th the abdomen was opened in the median line and a large intussusception of the small intestine was found lying beneath the left rectus. The apex lay at the bottom of the pelvis and the neck deep down in the upper part of the abdomen. This could only be brought to the surface towards the completion of reduction, which was easily accomplished by taxis applied at the lower end in the orthodox manner. It was then found that the presenting part of the intussusception had been an elastic, firm, and nodulated tumour as big as a hen's egg, which, though attached to the wall of the bowel, was freely moveable within the intestine in the vicinity of its anchorage. There was no congestion of the invaginated bowel or inflammation of the opposed serous surfaces, but there was a general hypertrophy of the intestinal walls both above and below the tumour.

[1] Transylvania Journal of Medicine, 1835.
[2] THE LANCET, August 28th, 1897, p. 525.
[3] THE LANCET, Feb. 23rd, 1895, p. 483.
[4] Medical and Physical Journal, No. 11.

The usual precautions having been taken a longitudinal incision one inch long was made in the gut over the tumour and opposite to the mesenteric attachment. Through this the tumour was delivered and found to have a pedunculated attachment as thick as a thumb. The mucous membrane was divided all round the pedicle with scissors and the tumour was clipped away at its base. A small portion of fat, which proved to be a part of the tumour, was left in the bowel wall. This was easily picked out. The bleeding was stopped, the aperture in the mucous membrane was sutured, and then the incision in the intestine was closed with a double row of sutures. A suture was also applied externally over the site of the attachment of the tumour, which was in the immediate neighbourhood of the mesentery. The operation was then concluded. The patient made an uninterrupted recovery and left the hospital on May 15th.

The tumour proved to be a mass of lobulated fat covered by intestinal mucous membrane. At one part there was superficial ulceration over an area as large as a shilling and the mucous membrane around it was congested and thickened. This had evidently been the presenting part of the tumour and of the intussusception.

Remarks by Mr. LAWFORD KNAGGS.—Cases of double invagination are sufficiently uncommon to justify putting the above instance (Case 1) upon record. In the history it will be noticed that the apex of the intussusception protruded from the anus two days before admission, but only upon one occasion. It is probable that the folding downwards of a collar-like roll of the outer layer by which the retrograde invagination was constituted occurred at this moment. The formation of the secondary intussusception, though it would not diminish the length of the primary one, would prevent its further increase which, it is well known, takes place at the expense of the sheath. That layer would become immoveable as a consequence of the inability of the secondary invagination to unfold itself when once the swelling and congestion at its apex had set in. The absence of any subsequent protrusion from the anus, which under ordinary circumstances might have been expected, is probably to be accounted for by this alteration in the conditions. It is interesting to note that the congestion which occurs at the apex of the primary invagination is also met with at the apex of the secondary one and may constitute the chief difficulty of reduction in each instance.

The interest of Case 2 depends not so much upon the fact that an intestinal tumour led to the formation of an intussusception, for an intestinal growth is a well-recognised exciting cause of that condition, but upon the nature of the tumour itself. Quite recently Mr. J. Bland-Sutton has recorded a case of intestinal lipoma and drawn attention to the probability that such tumours originate by the protrusion of mesenteric fat through the intestinal muscular tissue.[5] It will be seen that this case is all in favour of that view and, indeed, it was feared at the time of the operation that the fat seen in the bowel wall was a portion of mesenteric fat which appeared in consequence of a wound in the intestinal wall made when cutting away the tumour. That idea was dismissed when no aperture could be discovered and when the tumour was found to be a lipoma.

[5] THE LANCET, May 19th, 1900, p. 1437.

UNIVERSITY OF WALES.—The annual collegiate meeting of the Court of the University of Wales was held at Cardiff on Nov. 23rd under the presidency of the Senior Deputy Chancellor (Dr. Isambard Owen). The Court adopted a resolution of sympathy with the family of the late Professor A. W. Hughes. Afterwards there was a special congregation of the University, when 100 candidates were admitted to degrees.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The annual meeting of the subscribers of the Royal Albert Hospital, Devonport, was held on Nov. 22nd under the presidency of Admiral Lord Charles Scott. The report showed that during the past year 721 patients had been admitted, against 669 in the preceding year. The daily average number of in-patients was 43. 1512 casualty patients were treated in the out-patient department and also 770 ophthalmic out-patients. 136 women were treated in the lock ward. 179 patients were sent to the Pearn Convalescent Home. The total cost of maintenance of the hospital had been £4775 as against £4375 in the previous 12 months. The balance due to the treasurer was £576, as compared with £239 last year.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Suggestions for a Possible Improvement in the Method of removing Stones and Morbid Growths from the Interior of the Bladder.—Median Perineal Urethrotomy and Cystotomy through a Transverse Superficial Incision (after Celsus).—Exhibition of Specimens.

A MEETING of this society was held on Nov. 27th, Dr. F. W. PAVY, the President, being in the chair.

Sir THOMAS SMITH read a paper entitled, Suggestions for a Possible Improvement in the Method of removing Stones and Morbid Growths from the Interior of the Bladder. The object of the paper was to raise the question whether in the operation of suprapubic cystotomy for the removal of stones or morbid growths from the bladder it was possible to improve the present method of procedure. In view of the greatly diminished risk of interference with the peritoneal cavity Sir Thomas Smith suggested that in cases where it was desirable to obtain immediate union of the bladder wound it might be worth consideration as to whether the operation should be intra-peritoneal, so as to take advantage of the facility with which opposed surfaces of peritoneum unite after suture. A short statement was made of the precautions which would have to be adopted to suit the requirements of an intra peritoneal operation and of certain modifications in the routine method of performing suprapubic cystotomy. These modifications included the adoption of the Trendelenburg position, the distension of the bladder with air rather than with fluid, the opening of the abdomen at a higher point than that usually selected, the immediate closure of the bladder wound by suture, and the adoption of an after-treatment such as was usually employed when traumatic rupture had occurred.—Mr. CLEMENT LUCAS thought that the value of communication would have been enhanced if cases in which the operation had been performed had been submitted. As regarded the operation of suprapubic cystotomy it must be remembered that it was quite a different one from what it was originally when Sir Henry Thompson revived it. At that time the bladder was torn and drainage was accomplished above the pubes, but now the bladder was cut. It was a great thing to clear out the bladder thoroughly but he could not see the advantage of going through the peritoneum. It was not possible to exclude septic matter from the bladder. After giving due consideration to Sir Thomas Smith's suggestions he thought that there was a considerable risk of infecting the peritoneum.—Mr. W. BRUCE CLARKE remarked that in the circumstances referred to the surgeon was generally called upon to perform the operation on a septic bladder and he would want to hear more arguments before favouring the idea of opening the peritoneum under these circumstances. There were, of course, advantages in cases where there was a very large stone or a large tumour, in which the surgeon would be willing to take certain risks, but for ordinary purposes he did not think the suggestions that had been made were justified.—Mr. P. J. FREYER remarked that the subject opened up the question of suprapubic lithotomy. It was in the ease and simplicity of this operation in which its danger lay, but it really must be gauged by its mortality and this was very great.—Professor H. GILBERT BARLING had published statistics which he had collected from six London hospitals and six provincial hospitals, and out of 180 cases of suprapubic lithotomy the mortality had been 20 per cent., whereas the mortality for lateral lithotomy was 5 per cent. The mortality for litholapaxy was about the same. Suprapubic lithotomy was an operation essentially for large stone or tumour, but how people could undertake the operation in ordinary circumstances he did not know. It seemed to him that Sir Thomas Smith's proposal to abandon the extra- for the intra-peritoneal method was a very dangerous one. The suggestion of distending the bladder with air was not a new one, but he did not think it was practicable. One of the great advantages of the suprapubic method was that the surgeon could introduce his finger, and this could not be done if air were used. Moreover, one of the advantages was to be able to wash out the débris from the bladder, and this was not

possible when the bladder was distended with air.—Mr. CHRISTOPHER HEATH agreed with the last speaker in thinking that the suggested intra-peritoneal method was not feasible. He thought it was flying in the face of Providence to open the peritoneum when it could be done without. Moreover, some of the advantages of the suprapubic method were free drainage, thorough irrigation, and the readiness with which applications could be made to the interior, and these procedures could not be accomplished by the method suggested. Again, the suprapubic operation was the only one in which the surgeon could be quite sure that he had removed the whole of the calculus.—He mentioned a case in which he had operated and removed, as he thought, the whole of the stone, but subsequently a piece was found to be embedded in the sacculus of the bladder. He also referred to a case of rupture of the back of the bladder in which he had operated and he adverted to the difficulty of manipulating the bladder and stitching it in these circumstances. He would like to ask Sir Thomas Smith if his suggestions were purely theoretical, and if not, what were his experiences.—Mr. W. H. BENNETT thought that Sir Thomas Smith's suggestions were extremely valuable and that too much had been said about the risks of sepsis. These could be obviated by washing out the bladder before the operation, and then there would be no septic fluid to run into the peritoneum, and, further, a good deal could be done by proper packing around the wound. The suggested method would result in a readier union, and the transperitoneal operation would obviate the incrustation of the wound by phosphate.—Mr. W. G. SPENCER thought that the operation suggested should be regarded as a strictly abdominal one and not as an extension of suprapubic lithotomy. He referred to a case in which removal of a stone weighing 34½ ounces necessitated the opening of the peritoneum, and this case, in which the patient made a good recovery, certainly supported Sir Thomas Smith's suggestions. A necropsy was made on this patient some years later and no adhesions were found in the peritoneum. The suggestions made certainly commended themselves to him very strongly.—Sir THOMAS SMITH, in reply, said that he had brought the subject forward in order to receive opinions upon it before bringing it into practice. Some years ago, when in similar circumstances he had suggested the removal of stone from the kidney by operation that suggestion was less favourably received than the present one. He did not agree with Mr. Clement Lucas on the subject of suprapubic operation, and he advocated the lateral lithotomy as being less dangerous and fatal. As regards the distension with air the bladder would retain its shape quite long enough to get out the stone, and as to sepsis the débris must, of course, be removed beforehand by thorough irrigation.

Mr. W. G. SPENCER made a communication on Median Perineal Urethrotomy and Cystotomy through a Transverse Superficial Incision (after Celsus). This operation, he said, which was very similar to that described by Celsus, had proved of advantage in certain selected cases. The operation consisted in making an incision superficially across the perineum through its central point, with the ends curving backwards towards the ischial tuberosities on either side of the anus. The perineal and bulbar arteries on each side were then clamped and the external sphincter was detached from the central point, the lower end of the rectum being drawn well backwards. The urethra was next opened exactly along the middle line back to the prostate, so that the neck of the bladder was reached without any tearing. A rapid healing followed this median division of the urethra, so that the patient passed urine through the penis within a day or two, and after a week or ten days no more urine escaped by the perineum. Moreover, when the patient's legs were brought down from the lithotomy position the edges of the skin wound naturally came together in the fold. In Mr. Spencer's first group of cases the patients suffered from chronic urethral stricture with false passages. The operation allowed of a complete median division of the stricture throughout its entire length and the laying open of all false passages, so that the patients recovered without any fistula, and were able themselves to pass a large-sized bougie. The second group consisted of exceptional cases of stone where lithotrity or suprapubic lithotomy was unsuitable, the bladder being sacculated and contracted. These were treated by this operation, which proved much superior to lateral lithotomy, owing to the preliminary arrest of hæmorrhage, the median urethral incision avoiding any tearing. The third group consisted of cases of prostatic obstruction where the bladder was small and the obstruction mainly consisting of an enlargement of the lateral lobes forming a collar at the neck of the bladder. In these the obstruction was easily plucked away or burnt by a cautery used through a rectal speculum. All manipulations were well in view, hæmorrhage was prevented, and the post-prostatic pouch was drained by making a deep groove in the enlarged prostate, whilst injury to the rectum was prevented by the preliminary retraction.—Mr. CLEMENT LUCAS congratulated Mr. Spencer upon his paper. Mr. Spencer, he thought, scarcely did justice to Cock's operation. It was available for cases other than those of retention simply. He would certainly avail himself of Mr. Spencer's suggestions.—Mr. P. J. FREYER thought that the operation seemed a valuable one, especially for enlargement of one or both lobes of the prostate. Personally, he was not inclined to let the urine, which was septic, drain over the lower edges of the wound. He thought that stricture would be better dealt with by Wheelhouse's operation. He was under the impression that Cock's operation was obsolete. He had not done it for 12 or 13 years, and he thought that it was replaced by suprapubic aspiration and Wheelhouse's operation. He was surprised to hear Mr. Spencer say that lateral lithotomy had fallen into disuse. It was still very successfully employed in India and elsewhere. Professor Gilbert Barling's statistics showed that at one of the children's hospitals between 1888 and 1893 22 cases had been operated upon—15 lateral lithotomies, all of which were successful, and seven suprapubic lithotomies, four of which were fatal.—Mr. CHRISTOPHER HEATH remarked that this subject came up periodically before the society. In 1860 the late Mr. James Ward read a paper embodying a good deal of what Mr. Spencer had said. As regarded the incision he thought that it did not matter whether it was curved or not as long as it was free. The difficulty in Cock's operation was to cut the membranous urethra. He quite agreed with Mr. Spencer that lateral lithotomy had fallen into disuse.—Mr. SPENCER, in reply, remarked that drainage must take place through the perineum and it was much less painful to the patient if the tube was dispensed with. He thought that lateral lithotomy was a bad operation and ought to be relegated to oblivion.

Dr. T. R BRADSHAW (Liverpool) exhibited a Crystallised Deposit, hitherto undescribed, which he had found in a patient's urine. The urine when given to him was alkaline and the deposit was in large quantity. It consisted of elongated acicular crystals of extreme narrowness, arranged for the most part in sheaf-like bundles. On account of their extreme tenuity it was not possible to determine their optical properties nor to what system they belonged. Chemical analysis showed that they consisted of the monohydric magnesium phosphate, which had the formula $MgHPO_4$. The patient was a man with dilated stomach who was taking large quantities of magnesia. He died suddenly when he had been a few days in hospital and no post-mortem examination was obtained. Dr. Bradshaw had not met with any record of the occurrence of this salt as a urinary deposit, and he had failed to find it in the urine of other patients with gastrectasis who were taking magnesia. He suggested that it might possibly give rise to urinary calculus, and he had analysed several calculi from this point of view, but so far the results had been negative.

MEDICAL SOCIETY OF LONDON.

Discussion on the Diagnosis and Treatment of Thoracic Aneurysm.

A MEETING of this society was held on Nov. 26th, Mr. JOHN H. MORGAN, the President, being in the chair.

Dr. F. DE HAVILLAND HALL opened a discussion on the Diagnosis and Treatment of Thoracic Aneurysm. He commenced by reading the history of a case of aneurysm of the transverse and descending arch of the aorta in a man, aged 35 years, which had been seen by many of the leading physicians. He was treated first by confinement to bed, but this was not very successful. He had severe anginoid attacks which were relieved by morphia and chloroform. The patient had had syphilis in early life; he had been gouty and had had atheromatous vessels. When first seen the patient complained of a harsh cough, which had a peculiar clanging character, and was attended by very little or no expectoration. At first there were no physical signs indicative of an

aneurysm, but later dulness was noticed at the left apex. This was followed by pulsation in the second left interspace. There was some fulness in the veins on the left side of the neck and marked bronchial breathing in the left interscapular region was audible. At no time was there any inequality of the radial pulses or of the pupils. Paralysis of the left vocal cord only occurred four days before death. During the last six months of life dysphagia and the constant coughing up of a glairy viscid mucus greatly distressed the patient. At an early period of the case Tufnell's treatment was tried for seven weeks, but the patient was so intolerant of confinement to bed that it had to be discontinued. The end was preceded by severe attacks of paroxysmal laryngismus stridulus, with a cough like that of whooping-cough. In the attacks the face became purple and the surface of the body livid. On laryngoscopic examination abductor paralysis of the left vocal cord was found. Death occurred in one of the attacks of dyspnœa, four and a half years from the commencement of the symptoms. At the necropsy a tumour of about the size of a fœtal head was found lying immediately above the sac of the pericardium. The whole of the transverse and descending parts of the arch of the aorta were apparently included in the aneurysm. There were evidences of pressure on the trachea and both bronchi but especially the left and on the œsophagus. The left lung was collapsed to about two-thirds of the size of the right lung. The heart was of about normal size and depressed with its long axis lying transversely. Dr. Hall commented on the difficulty of the diagnosis in this and similar cases of aneurysm in which at the onset physical signs were wanting or were very obscure. He pointed out that a harsh, clanging cough in a middle-aged man with atheromatous vessels and a history of syphilis were very suggestive of aneurysm. He laid stress on the frequency of paralysis of the recurrent laryngeal nerve, especially on the left side, and emphasised the importance of systematic laryngoscopical examination in all cases of obscure intra-thoracic mischief. This examination as a routine measure was necessary as unilateral abductor paralysis was compatible with a practically unaltered voice. Of 41 cases of aneurysm which he had seen 22 had presented hoarseness and 19 had presented paralysis of one or other vocal cord, usually the left. Dr. Hall alluded to the paroxysmal nature of the dyspnœa met with in cases of intra-thoracic aneurysm, and thought there were not infrequently attacks of laryngeal spasm. Tracheotomy was generally useless, as the main cause of the dyspnœa was direct pressure in the trachea. He regarded the diastolic shock or "thud" as the most reliable auscultatory sign of aneurysm, the presence or absence of a murmur being of comparatively small importance. He had not found tracheal tugging to be of assistance in diagnosis. The combination of loud tracheal breathing and dysphagia, pointing to pressure on the trachea and œsophagus, was, in his opinion, very suggestive of aneurysm. The most recently introduced aid to diagnosis of aneurysm—viz., the Roentgen rays—promised to be of the greatest possible assistance. In discussing the treatment of aneurysm he pointed out that the cases subjected to the Tufnell method required to be carefully selected, and he was not in favour of restricting the diet to the quantity advised by Tufnell. He had found that restriction to 10 or 12 ounces of solids and from 12 to 16 ounces of fluids was sufficient, and as much as 18 ounces of solids might be allowed, but the fluids must not exceed 16 ounces. If this plan were adopted drugs should as far as possible be avoided. His experience of the treatment of aneurysm by the subcutaneous injections of gelatin was limited to one case which was not benefited by it. Dr. Hall suggested that the discussion might be profitably directed to the following points:—1. The diagnostic value of the diastolic thud in aneurysm of the aorta. 2. Was tracheal tugging ever a sign of great importance? 3. The range of the Roentgen rays in the diagnosis of aneurysm. 4. If the Tufnell plan of treatment were adopted, how long should it last and should it be continuous or intermittent? 5. What amounts of solids and of fluids were found to answer best? 6. Was it desirable to give iodide of potassium during a course of Tufnell's treatment? 7. Was there any evidence forthcoming as to the utility of chloride of calcium in the treatment of aneurysm? 8. Was Lancereaux's method of treatment by the subcutaneous injection of gelatin a safe and reliable plan? 9. For what condition should tracheotomy be advised in cases of aneurysm of the aorta?

Sir WILLIAM BROADBENT said that he had seen the case to which Dr. Hall had referred to in July, 1896, and had come to the conclusion that there was an aneurysm of the third part of the aorta, although at that time there was no distinct pulsation. The principal point was the slight extension of dulness on the left of the manubrium and the reinforcement of the aortic second sound at that spot. Tracheal tugging—a sign he never failed to look for—was present and also brassy cough and unequal pulses. The jugulars did not empty on deep inspiration and there was imperfect entry of air into the left lung. He had ordered iodide of potassium. He placed no reliance upon mere symptoms as an indication of consolidation. If consolidation was taking place in an aneurysm the chief indications of this consolidation were a diminution of the diastolic shock and a modification in the ringing second sound. Murmurs were of no significance whatever in aneurysm. He had seen a parallel case as regards the physical signs, but there was no paralysis of the vocal cord. Under iodide of potassium the patient had greatly improved. He had seen him lately. The diastolic shock had disappeared. The dulness was diminishing and the aortic second sound was not remarkably ringing. As regards the points under discussion, the diastolic thud when present was absolutely diagnostic, but its absence in aneurysm of the second or third part did not nullify other physical signs. Moreover, it might disappear when consolidation had taken place. The tracheal tugging was of more interest than importance in his opinion. Skiagrams might undoubtedly be useful in those lesions which were not accessible to physical examination, but he had not yet seen a case in which they had achieved or contradicted a diagnosis made by other means. Turning to the question of treatment, he believed that iodide of potassium answered every purpose and rendered what was called Tufnell's treatment unnecessary. He had never found this extreme curtailment of fluid indispensable. The great opportunity for successful treatment came, not in the early stage of an aneurysm, but later, when its orifice had become narrowed; consequently treatment which had previously failed might be successful later. He had had no experience of calcium chloride or of gelatin. As to tracheotomy, it was of no use when the trachea was directly pressed upon, but free bleeding afforded the greatest relief to breathlessness and pain, and he referred to a case in which the patient had lived for many years afterwards.

Dr. HUGH WALSHAM referred to a case of aneurysm in the Victoria Park Hospital in which the heart was lying transversely in the thorax, in which the Roentgen rays had enabled them to make a diagnosis. This procedure was certainly useful in aneurysms of the transverse and descending arch. He also referred to another case of a woman who was thought to have only aortic regurgitation and who presented no symptoms or signs of an aneurysm which was revealed by means of a skiagram.

Dr. ROBERT MAGUIRE wished again to ask whether anyone had seen a case of aneurysm occurring in the labouring man absolutely cured so that he could return to his work. It was undoubtedly true that those who did light work could be cured in this sense but he doubted if labourers could be restored to this extent. He had seen several cases in which he believed that the constant pressure of an aneurysm upon the œsophagus and trachea which resulted from a patient habitually lying on his back produced a tendency for the aneurysm to burst into these passages. He wished particularly to refer to the results of Lancereaux's treatment. He had treated four cases in this way all with good results. He could not enter into all the details but there was no question that consolidation had been brought about in these cases. The first presented a cough, alteration of voice, paralysis of the left vocal cord, dilatation of the heart, a systolic murmur both at the aortic orifice and at the apex, the cardiac apex being situated in the axilla. After the third and fourth injection there was a marked alteration in these cases. The cardiac murmurs had disappeared, the heart had gone back into its right place, and the area of dulness had diminished. The second and third patients also showed great improvement both in the sound of their voices and in other symptoms. The fourth case showed an improvement in the area of dulness and a great relief in the pain which affected the sixth to tenth intercostal nerves. His method was to inject 100 cubic centimetres of absolutely sterile gelatin of a strength of 2 per cent. made up with seven per 1000 chloride of sodium solution. It must be injected into the intra-muscular tissue and he

preferred the buttock, avoiding the sciatic nerve. The skin could be frozen with methyl chloride and the needle could be introduced at least two inches into the muscle. Everything must be absolutely sterile. This was a point of the greatest importance. He had had considerable difficulty in finding a description of Lancereaux's methods.[1] Critics had said that the method was not so successful in other hands as it was in those of Lancereaux, and this he thoroughly believed, probably because of the want of care in its execution. He began by doubting the efficacy of the method, but he thoroughly believed in it now. His practice was to give four injections on four consecutive days, then to wait for two weeks and repeat the injections, and then to wait for a further period of time. The question as to whether the treatment was quite safe he was not prepared to answer, but there was no doubt that thorough asepsis and many little points of technique were of the highest importance, and undoubtedly there were several sources of risk of tetanus and sepsis such as might occur in all surgical procedures.

Dr. R. SANDERSON (Brighton) remarked that the Tufnell treatment was certainly not suitable for neurotic persons. The patient referred to by Dr. Hall had spent his time in studying the anatomy of the thorax and calculating in which direction his aneurysm would burst. Neurotic cases, he believed, were much better moving about.

Dr. OSWALD A. BROWNE had had the opportunity of making necropsies on a large number of cases at St. Bartholomew's Hospital. In nine out of 35 cases of aneurysm of the aorta the swelling arose from the posterior wall of the transverse portion, and 15 out of 35 compressed the trachea. Five of them compressed the œsophagus also. This went to show how frequently the lesion affected the transverse arch and projected backwards. Death frequently resulted from pressure upon the trachea. He did not think that the recurrent laryngeal nerve was so frequently affected. In only three out of the 35 cases was it involved. He referred to a case of aneurysm with slight dulness in front of the sternum. Examination of the larynx showed no signs, but a few days later the patient was attacked with a severe paroxysm of dyspnœa. This was temporarily relieved by bleeding, but the dyspnœa was repeated each day and he died upon the fourth day, and an aneurysm no larger than a tangerine orange was found compressing the trachea. Aneurysm of the descending part of the arch generally made its way into the left interscapular space and often obstructed the œsophagus. There was a difficulty in carrying out Tufnell's treatment. He mentioned a case of aneurysm of the abdominal aorta treated by calcium chloride. The man was about 35 years of age; an aneurysm of about the size of a cricket ball could be made out in the abdominal aorta. He was attacked by severe abdominal pain. He remained in hospital at rest and was put upon 20 grains of calcium chloride, gradually increased to 30 grains, three times a day. He went out completely well, and when seen two years subsequently was still carrying on his occupation of a tramway conductor.

The discussion was adjourned to Dec. 10th.

CLINICAL SOCIETY OF LONDON.

Thrombosis of the Inferior Vena Cava.—Syphilitic Pyrexia.—Subsequent History of Nine Cases in which the Spleen had been Removed.—Nephritis without Albuminuria.

A MEETING of this society was held on Nov. 23rd, Dr. W. CAYLEY being in the chair.

Dr. SIDNEY PHILLIPS narrated a case of Thrombosis of the Inferior Vena Cava, Iliac, and Femoral Veins of acute onset and fatal termination, with symptoms resembling those of perforated gastric ulcer. The patient was an anæmic maid-servant, aged 19 years, who had suffered from slight symptoms of indigestion. She was suddenly seized with pain in the abdomen, vomiting, and collapse, accompanied by a temperature of 102° F. Soon after this (on Dec. 6th) there were swelling and pain in the region of both parotid glands, but this cleared up. Next (on Dec. 9th) she was taken with cramping pains and thrombosis of the deep veins in the left calf. Finally, there was swelling (œdema) in the whole of the left lower extremity, followed by abdominal pains and thrombosis in the portal system. Throughout the temperature was not elevated except on the first occasion. The patient died from exhaustion. At the necropsy extensive thrombosis was found in the inferior vena cava and iliac veins and the veins of the left lower extremity. No local or constitutional cause for the thrombosis could be discovered and Dr. Phillips regarded it as a case of primary infective thrombosis. This case showed that parotitis was not, as often stated in text-books, distinguishable from mumps by being unilateral and suppurative.—Dr. CAYLEY asked if an examination of the clot in the inferior vena cava had been made.—Dr. SAMUEL WEST referred to a case which he had reported some years ago which resembled Dr. Phillips's case in some particulars, only there were no abdominal symptoms suggesting perforating ulcer. The patient was a young girl who was taken with pain in the abdomen followed by swelling of the legs. Shortly afterwards the urine contained a good deal of albumin. This was followed by an attack of shivering accompanied by ascites, indicating thrombosis of the portal system. She died and at the necropsy a clot was found in the inferior vena cava, portal system, and veins of the legs. The thrombus apparently originated in this case from one of the pelvic veins in which a thrombus of older date was discovered.—Dr. PHILLIPS, in reply, said that no bacteriological examination of the clot had been made because in the course of the necropsy the vena cava had been injured by the knife, and it was thought useless afterwards to make cultures.

Mr. CAMPBELL WILLIAMS reported a case of Late Syphilitic Pyrexia (intermittent essential fever of syphilis). The patient was a man, aged 43 years, who contracted syphilis in December, 1896. He had the usual sore, enlarged glands, and secondary symptoms. After this he had suffered little with the exception of a sore tongue, which was irritated by an ill-fitting denture. This was quite healed by June, 1898, and he had no further symptoms. He was treated with mercury mainly, alternately with iodides, for a period of two years, and was free from all symptoms for 18 months before ceasing attendance. In January, 1900, he had influenza, and in April he was reported to be very ill from post-influenzal intermittent fever, for which he was being treated with quinine and arsenic. Mr. Williams saw him on April 18th. He had periostitis of the right clavicle and pyrexia. His temperature rose every afternoon and the crisis came in the small hours of the morning. Syphilitic fever was diagnosed, he was put upon mercury, and on April 25th his temperature became normal and had remained so ever since. He was now quite well.—Dr. PHILLIPS remarked that such cases were by no means uncommon, and he referred to one which was recorded in the Transactions of the Medical Society of London. In another case which had been under his care a woman who had contracted syphilis 10 years previously developed pyrexia which might be mistaken for malarial fever. He thought that such cases were commoner than was generally supposed. They were apt to be confused with tubercle or to be mistaken for quartan or tertian ague. Some years ago a case had been reported by the late Dr. J. S. Bristowe in the Transactions of the Clinical Society of London of a man who was affected with intermitting pyrexia of obscure origin until on one occasion, when the eyes were being examined, syphilitic choroiditis was discovered. Mercury was then administered and the patient got well.—Dr. T. D. SAVILL agreed that these cases were not uncommon and he was surprised that this fact had not found its way into text-books. He was house physician when the case referred to by Dr. Phillips was under Dr. Bristowe's care, and he believed that the drug used was iodide of potassium, not mercury. He commented on the sudden subsidence of the temperature under mercury in Mr. Williams's case, remarking that in his experience the temperature did not fall as rapidly under mercury as under iodide. He recalled a rather remarkable case seen by him at the Croydon Hospital—that of a lad, aged 15 years, who was supposed to be suffering from pernicious anæmia. He had an intermittent temperature and this lasted for about nine months, when he died. Post mortem they found very extensive endocarditis and endarteritis, and on opening the skull they alighted upon a large gummatous mass stretching across the frontal region. The clavicle was also involved and striæ were seen in the cornæ.—Mr. CHARTERS SYMONDS took exception to the term "essential fever." He thought that in such cases there was always a periostitis or some gummatous deposit which might

[1] Our readers will find an account of the method in THE LANCET, vol. ii., 1898, pp. 1092, 1299, 1369.—ED. L.

or might not be discovered but which always acted as a cause for the constitutional disturbance.—Dr. CYRIL OGLE was not quite sure whether the cure by mercury was sufficient evidence to prove such cases to be syphilitic. He referred to a case which he had seen in St. George's Hospital of a patient who had suffered from pyrexia for eight weeks before admission and eight weeks while in hospital. Every second or third day the temperature went up to 103° or 104° F., accompanied by headache, sweating, and sometimes vomiting. Treatment by quinine and arsenic was without effect and repeated examination revealed no cause. Administration of creasote in this case was attended by a disappearance of the fever and he suggested that the pyrexia was probably due to intestinal sepsis arising from some abnormal fermentation within the intestines. Possibly mercury would have the same effect as an intestinal antiseptic.—Mr. WILLIAMS, in reply, said that he had used the term "essential fever" in contra-distinction to that which appeared with the initial rash of syphilis. In regard to the treatment he believed that such cases reacted more quickly to mercury than when treated by iodide. One of the interesting features in this case was the thorough treatment by mercury during 18 months to which the patient had been previously submitted.

Mr. J. BLAND-SUTTON reported the details of a case in which he had performed Splenectomy for an Enlarged and Wandering Spleen in a woman, aged 34 years. The patient, already the mother of seven children, was two months pregnant at the time of the operation; the abdominal wall being very lax from repeated pregnancies allowed the spleen to tumble freely about, and this caused much inconvenience and pain. The operation was carried through without difficulty; the patient quickly recovered and left the hospital 18 days after the splenectomy. Her subsequent health had been very good. Mr. Bland-Sutton remarked that since 1892 he had performed the operation of splenectomy on nine occasions, two of the patients having died. One was a malarial case with intense leucocytosis and one was a case of malignant disease. Seven of the patients were living and he had taken some pains to ascertain that they were still in a condition of good health. Four of the operations had been done for wandering spleen. Two of them were for curious enlargement unattended by any increase either in the red or white blood corpuscles. In one the spleen had been removed because it was torn during an operation performed for a large abscess the base of which consisted of the capsule of the spleen. One of these cases was particularly worthy of comment. The patient was tuberculous and was transferred from the Brompton Hospital to the Chelsea Hospital on account of a lump in the abdomen which was diagnosed as a wandering spleen. The patient had a cavity in the lung and he (the speaker) was doubtful about performing the operation of splenectomy because in two or three of the recorded cases patients had developed lung disease subsequently to the operation. However, splenectomy was performed and the patient made a good recovery. The spleen, which had been removed, was found to be filled with miliary tubercle, the nodules having been examined by Mr. A. G. R. Foulerton and found to contain tubercle bacilli. The operation had been performed three years ago, the patient remaining well for some time, but at the present time the lung disease was again becoming active. In all the seven cases repeated observations had been made upon the number of red and white blood-corpuscles with great care and no alteration had been discovered in the blood. Indeed, anyone examining these patients would never suspect them to be spleenless.—Dr. CAYLEY remarked that it would be interesting at the necropsy of Mr. Bland-Sutton's cases to see what had made up for the loss of the splenic tissue.—Dr. PERCY KIDD asked if there was much hæmorrhage during the operation. He referred to a patient suffering from leucocythæmia on whom an operation had been performed upon the kidney, on account of pyuria, in spite of the presence of leucocythæmia. Such cases were often attended by considerable hæmorrhage.—Dr. A. F. VOELCKER asked if an accessory spleen had been discovered in any of the cases. If so this would afford an explanation of the absence of changes in the blood in Mr. Bland-Sutton's case. He had made a post-mortem examination on one case in which the spleen had been removed one and a half years previously. There was no accessory spleen in this case and the patient eventually died with syphilitic disease of the liver.—Mr. BLAND SUTTON, in reply, said that he always avoided operating in cases of leucocythæmia. Since his first operation an average of about six cases per annum of enlarged or wandering spleen had been sent in for operation, but if an examination of the blood showed leucocytes they almost invariably died from leucocythæmia within from three to 18 months. His rule was that if the proportion of white corpuscles did not exceed 20 to the 1000 splenectomy might be performed. He referred to a patient, aged 26 years, who had an abdominal tumour which was thought to be malignant disease of the spleen. The proportion of white corpuscles in this case was 20 to the 1000, and although it might be regarded as an early stage of leucocythæmia it was decided to explore. The operation was successful, although there was a little more hæmorrhage than usual; but at the end of 48 hours the patient developed some curious nerve phenomena and the stomach seemed to indicate acute dilatation. She died within 24 hours. There was nothing to indicate hæmorrhage. The case was a private one and a necropsy was refused. During operation he had always looked out for an accessory spleen so as to leave it behind if it were present. He had hunted up one of the late Sir Spencer Wells's old cases—a young woman upon whom splenectomy had been performed 15 years before. He (Mr. Bland-Sutton) had found her to be in good health though she was of slender build.

Dr. W. P. HERRINGHAM communicated a case of Nephritis without Albuminuria. The patient, a boy, aged nearly four years, who was admitted into the Children's Hospital, Paddington-green, for diarrhœa and vomiting on March 29th, 1899, was supposed to be cured, and was sent to the convalescent home of the hospital on May 5th. While in the ward the urine was thrice examined and was found to be natural. The amount was normal. There was no previous history of scarlet fever. From May 5th to July 14th the patient was in good health at the convalescent home, which was visited regularly by the resident medical officer, and where the children were kept under constant supervision. There was no case of scarlet fever at the home. On July 14th dropsy began in the feet and spread to the legs and face. The urine was not albuminous. The patient was sent back to the hospital and for the next six weeks he formed a typical picture of subacute nephritis, but without ever showing any albumin in the urine, which was exceedingly scanty in amount. No formed elements were ever visible under the microscope. On August 29th he died. At the necropsy (made by Dr. L. G. Guthrie) the viscera, including the kidneys, appeared natural. Microscopical preparation (made by Mr. A. E Turner) showed cloudy swelling in a few of the convoluted tubes and albuminous plugs in a great many; in a few of the collecting tubes similar plugs were found. An exudation, apparently of serum or albumin was found in almost all the glomeruli, and there may have been some cellular increase in the capillary tuft. As the child was under hospital observation for three and a half months before the onset scarlet fever might be excluded. The case was believed to be unique. Several cases had been recorded of nephritis without albuminuria following scarlet fever, but though it had been suspected to occur without scarlet fever the condition had never been proved by post-mortem examination. Why the anuria should be so extreme he did not understand.—Dr. WILLIAM EWART asked for details as to the symptoms in this patient and what treatment had been adopted. In some cases of dropsy he had seen very good results from acupuncture and the administration of quantities of water to drink. As soon as the serum exuded from the punctures the urinary secretion was increased and its specific gravity improved. He regarded Dr. Herringham's case as an illustration of a special disease not yet described.—Dr. F. E. BATTEN had seen two or three cases resembling the one narrated. One was that of a child, about four or five years of age, who passed very small quantities of urine, containing very little urea of low specific gravity, attended by generalised œdema. The patient recovered. Another case presented œdema exactly like albuminuric cases. The patient passed urine of low specific gravity containing very little urea. The child died and at the necropsy he thought that the kidneys were rather small for the child's age, but the microscope revealed no change of any kind.—Dr. JOHN FAWCETT asked what evidence there was of the exudation in the glomeruli being of an albuminous nature.—Dr. WEST remarked that the condition was not unknown in infancy and in children under two years of age. They presented dropsy and all the symptoms of renal disease. Nevertheless, careful examination revealed neither albumin

nor other abnormality in the urine. He had seen several cases but they all got well. He was not satisfied that the dropsy was of renal origin.—Dr. HERRINGHAM, in reply, said that he felt some doubt as to the renal nature of the disease though it had all the symptoms of it. The patient had had no anæmia previously. The œdema was the first symptom and it spread rapidly upwards from the legs. He felt no doubt about the nature of the changes in the kidneys which he had described. They had been seen by others. As regards the treatment by acupuncture he had never seen a patient recover when treated by this method.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Mental Disorders dependent on Toxæmia.—The Use and Abuse of Travel in the Treatment of Mental Disorders.—Application of Electricity in certain Forms of Mental Disease.

A MEETING of this association was held on Nov. 21st, Dr. FLETCHER BEACH being in the chair.

Sir DYCE DUCKWORTH having read a paper on Mental Disorders dependent on Toxæmia (a full report of which appeared in THE LANCET of Nov. 24th, p. 1475) a discussion followed.—Dr. F. W. MOTT paid a high tribute to Sir Dyce Duckworth for his paper and referred to the selective actions of different poisons, instancing in this respect strychnia in its effect upon the spinal motor neurons. He thought that an important contributory factor in the production of insanity which had not been mentioned by Sir Dyce Duckworth was strain, and to this Professor Edinger had called marked attention and had proved that it was a factor in the causation by experiments upon animals. He also mentioned hæchish poisoning in Egypt as one of the toxæmic causes of insanity.—Dr. G. H. SAVAGE said that he felt that what delirium was to the general physician acute mania was to the alienist. In consequence of a remark by Sir Samuel Wilks many years ago that one would expect the neurotic person to be more liable to delirium than another, he tried to find out whether that was the case, but at the fever hospitals he found that in many instances no inquiry had been made into the history in this respect. He agreed in the probability that a large number of puerperal cases had a septic origin.—Dr. EDWIN GOODALL said that in some cases of delirious mania bacteria had been found, including staphylococcus pyogenes albus and a diplococcus which corresponded with Fraenkel's pneumonia coccus. Animal experimentation laboured under so many disabilities in this country that little was to be expected, but he suggested that the ecchymoses seen after convulsions might be examined for organisms. He once read in a German paper that malaria was conducive to the cure of mental conditions, and one German physician suggested that asylums should be built on malarial sites. He remembered reading that in one Italian hospital in Constantinople good results in mental disorders were obtained by injection of anti-streptococcic serum.—Dr. CHARLES A. MERCIER said that the interesting point was that toxæmia was the only agent which they were sure would produce insanity—that is to say, it was the only agent by which they could produce insanity at will. Alcohol was a case in point and the insane manifestations corresponded with the amount of alcohol administered. With regard to heredity, how could they trace hereditary predisposition? how could they recognise it? He thought that Dr. Mott would admit that strain had only a localising influence. He rather looked upon the transmitted heredity as an inability to resist and eliminate toxic products. Insanity affected not only the brain but the whole man, and any derangement might be contributory to the mind disease.—Mr. J. F. BRISCOE pleaded for greater attention being paid at hospitals to the alimentary canal and the examination of the motions of patients in the same way as attention was given to urine.—Sir DYCE DUCKWORTH, in reply, said that he took it that the effect of strains was simply to produce a *locus minoris resistentiæ* and that determined the part where the toxin had effect. The question of inheritance of tendencies from parent to child concerned them very deeply and was a matter of enormous importance. He urged his hearers not to dogmatise too much yet and not to say now that all insanity was toxæmic, although it might hereafter be found to be so. Certainly toxæmia played a very large part in insanity and it was on that subject that his contribution had reference.

Dr. G. H. SAVAGE read a paper on the Use and Abuse of Travel in the Treatment of Mental Disorders. He said: As I have found that travel is being ordered for nearly every form of mental disorder it seems to me time to consider whether this all but universal remedy is beneficial or not. First I would consider the reasons for sending persons of unsound mind away for voyages and similar expeditions. Many are sent away simply to get rid of them, as they become very trying both to friends and relatives as well as to the general practitioner; next they are sent away in very many instances to avoid certification. The magisterial interference, though safeguarding the medical man, leads to the inconsiderate removal from home of many patients. Lastly, some patients are sent away for their real medical treatment, and these cases I divide into two groups: those who from general reasons would be sent away—for example, patients who cannot winter in our climate and who in addition have become deranged—and the second group contains those who are sent to distract them from their morbid mental ideas. The medical man is in the habit of ordering for patients what suits himself; hence some medical men who are not good sailors avoid sending patients to sea, while others who are fond of the sea send many on the water. I think that for slight disorders of mind following some local cause, such as love disappointment or domestic grief, travel is good; for the confirmed hypochondriac I do not think it does any good. The cause of the disorder must modify the treatment to some extent. I do not think that melancholia is benefited in many cases by travel. The danger of suicide is increased and I do not think that the forcing of varying fresh sensory impressions on such patients is for their benefit. I believe travel to be useful to many convalescing patients, but here, too, the danger of suicide has to be faced. Those suffering from delusional insanity had better not be sent on voyages—every fresh impression gives rise to fresh suspicion. In conditions of apathy and partial dementia such as follow toxic and similar conditions, taking influenza as a type, the patients are often cured by travel. Probably the most difficult cases to advise upon are those of general paralytics in their earlier stages, for then the friends will not believe that patients so vigorous and so buoyant can be on the road to a fatal malady. They think that removal from the causes of excitement must do good. Again, in the stages of remission many such patients are sent abroad; I can only say that this is done at great risk and I have seen such misery follow that I cannot advise it. I only strongly advise travel when emotional causes have caused emotional disorders of slight degree, when patients are apathetic and neurasthenic, and when they are convalescing from mental disorders. I strongly oppose such treatment in active melancholia and general paralysis of the insane. I have only time to hint at the methods of travel but I would insist upon it that sea voyages are only suitable to a small number of persons and that long railway journeys are good neither for the sound nor the ailing.—Sir HERMANN WEBER agreed that there were dangers in long sea voyages for the insane. Three intimate friends of his had been sent—by others—on long sea voyages. One, an only daughter, suffered from grave melancholia and was sent to sea with an attendant. One of the other two had two attendants and a medical man. Two of them killed themselves on the way by jumping overboard. The third repeatedly tried it, but as he had a medical man and two attendants he was prevented. But he had seen much good result from sea voyages in great mental depression, as in the case of students, and in depression caused by shock. Long sea voyages after influenza, also, he had found beneficial, and with that he understood Dr. Savage to agree. He instanced one case of insanity in a botanist who, in travelling about Switzerland for his health, encountered another botanist who showed him rare ferns, and the result was that his interest was awakened and he was restored to health. In conclusion he referred to a coachman who was mentally deranged. Dr. Savage had the courage to recommend that he be allowed to drive again and the result was his cure.—Dr. E. SYMES THOMPSON said that he agreed that long voyages should not be undertaken after the borderland of insanity had been passed; but there were very many cases which stopped short of that where, however,

serious mental trouble was threatened which derived great good by voyages. If mental disease was largely a matter of defective power of elimination, surely the value of changed surroundings and climate was great in increasing the eliminative power. He spoke approvingly of Egypt as a health resort owing to the pure desert air and the new surroundings, especially from an archæological point of view.—Dr. ROBERT JONES spoke against the habit of sending general paralytics abroad and gave instances in which the patients had to be sent for back again as they were in such a pitiable condition. He asked Dr. Savage to refer in his reply to the systemisation of the delusions. Dr. Savage had suggested that he (Dr. Jones) should travel with a man who had a particular form of insanity associated with delusions, and when they got some distance on the voyage the man had the delusion that his trouble was due to the medical man and refused to go an inch further. The question of elimination was very important with regard to toxæmia and therefore with regard to insanity. He had derived very great pleasure, indeed, from the contributions of Dr. Savage and Sir Dyce Duckworth.—Dr. L. A. WEATHERLY said that he felt that the question of sending patients for a change of air and scene could not be dealt with generally, but each case must be taken on its own merits. A mode of treatment which was beneficial to one patient might be absolute cruelty to another.—Dr. SAVAGE, in reply, thanked the speakers heartily for taking part in the discussion. Sir Hermann Weber's experience corresponded with his own. When he suggested that Dr. Robert Jones should go away with a patient he (Dr. Savage) had not developed his present opinions. He had suggested the propriety of one lady travelling because she would not go out of doors otherwise.

Dr. H. LEWIS JONES, in a paper upon the Application of Electricity in certain Forms of Mental Disease, said: The treatment of patients with any form of mental failure is not a thing which comes very frequently before one who is engaged in general practice, but from one or two cases which I have had to treat and also from general considerations upon the therapeutic effect of electricity I am extremely glad to have an opportunity of bringing before this meeting certain claims which electricity seems to have for use in the treatment of the insane. The most important development of electricity in the last 10 years has been in the direction of general electrification for general effects, and this line of treatment has had the advantage of being very carefully worked out by a physiologist who is not at the same time a medical man, Professor D'Arsonval. He has shown what a profound effect can be produced upon the general nutrition of the body in this way and has established by measurement the increase of carbonic acid, of body heat, and of urea in animals and in people submitted to general electrification. Clinical experience has also demonstrated the immediate effect which follows general electrification in various forms of debility, and from a consideration of these points I have for long felt that certain forms of mental failure ought to be eminently suitable for treatment in this way. [Dr. Jones here exhibited and demonstrated the simplest modes of setting up general electrification and the electrical bath treatment.] I would recount the following cases. The first was a case in which a patient after influenza lost his memory, became very weak and feeble, and was referred to me by a medical man as showing signs of progressive dementia. In a short time under simple electrical stimulation the patient became completely well. The next case was one of a journalist who completely broke down from overwork and who became unable to attend to business, and entirely altered in his manner and was so strange that on one occasion he was brought home by the police who found him wandering at large. Under suitable treatment by the electrical bath his symptoms all gradually subsided and he became perfectly well and resumed his duties. The third case is of somewhat the same type—viz., the case of a middle-aged man showing increasing inability to do his work or even to get about London as he used to do. He could not walk well; he fell down frequently, and his mental condition was dull and stupid. Under treatment by the electrical bath he has continued to improve up to the present time and he remains under treatment. These patients have all been treated with the electrical bath and the sinusoidal current taken from the mains of the Electric Lighting Company; the effect is simply that of general stimulation under which the appetite improves and the patient gains weight and sleeps better. These cases, which I hope will be supplemented by the recital of a series of instances of people who were definitely insane and treated by Dr. Robert Jones, should go far to support the belief that general electrification can be of very decided service in those forms of mental disease in which a failure or defect of nutrition is the important factor.—Dr. ROBERT JONES then detailed his favourable experience of the electrical bath treatment.—Dr. GOODALL also gave the results of his experience in the same direction. In neurasthenia his experience had not been a long one, but of nine cases five were decidedly improved. The cases in which he had looked for improvement were stuporous cases and chronic cases in which the patients had run down in health.—Dr. ROBERT JONES asked whether the beneficial effects of the water of the bath could be separated from the effect of the electricity, so that they could form an estimate of the value of each.—Dr. LEWIS JONES, in reply, said that it was difficult for him to separate the two factors in the bath, but he had had ample evidence of electricity without water producing increased metabolism and beneficial results. His own experience in reference to mental disorders was necessarily small, but those cases which had come under his notice had been much benefited by the treatment which he had outlined.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases.—Sub diaphragmatic Abscess complicating Typhoid Fever.—Intussusception of the Vermiform Appendix.—Haab's Electro-magnet.

THE fourth ordinary meeting of the session was held on Nov. 22nd, Mr. EDGAR A. BROWNE, the President, being in the chair.

Dr. C. J. MACALISTER and Major R. ROSS, I.M.S., brought before the meeting two cases from the Tropical Ward of the Royal Southern Hospital. The first was a case of Æstivo-Autumnal Fever in which the daily exacerbations had been severe, the temperature registering from 106° to 107° F. in spite of the administration of large doses of quinine. After the administration of two doses of Warburg's tincture the attacks entirely ceased for nearly three weeks. The case was of peculiar interest in that it presented retinal hæmorrhages (the so-called malarial amblyopia), the result of plugging of the retinal arteries with the malarial parasites. The other case was one of Dysenteric Ulceration throughout the whole length of the Colon, from which absorption had taken place, and the patient died from a consequent septic pneumonia. The diagnosis was rendered difficult owing to the absence of diarrhœa or other definite intestinal symptoms.—Major ROSS remarked with reference to the first case that the infection was one by the æstivo-autumnal parasites and that the punctiform retinal hæmorrhages were an example of similar hæmorrhages often found in the cerebrum and meninges in pernicious paroxysms due to this organism. With regard to the second case he stated that there was leucopenia and that doubtful amœbæ coli had been found in the stools—doubtful because the stools were old when examined. He questioned whether there was such a condition as malarial dysentery, properly speaking, but thought that cases attributed to such were due to the concurrence of the two diseases.—Mr. R. J. HAMILTON did not consider that the diagnosis "malarious amblyopia" was borne out by the charts of the field of vision and the description given by Dr. Macalister. There were retinal hæmorrhages evidently, as there might be hæmorrhages anywhere in such a pernicious condition of the blood, and the central scotoma was due to a centrally situated hæmorrhage. But the vision as recorded and the perimetric chart were not those of a toxic amblyopia, which would show evidences of a retro-bulbar neuritis, and a subsequent optic nerve degeneration might be looked for.—Dr. A. S. F. GRÜNBAUM remarked that since the discovery of the bacillus of dysentery by Flexner and by Kruse the serum diagnosis of this disease, which had already been shown to be possible, should be resorted to in doubtful cases. The cultures necessary for this method were in Liverpool.

Dr. R. CATON and Mr. THELWALL THOMAS contributed notes of a case of Sub-diaphragmatic Abscess complicating Typhoid Fever. The patient, a male, aged 32 years, suffered from enteric fever with defervescence on the twenty-fourth day. He was allowed to get up on the forty-third day, when the temperature at once rose. He was kept in bed for six

days and again allowed to get up, when he had a rigor and there was a rise of temperature. No cause could be ascertained until a fortnight later, when a dull area was percussed at the base of the left lung, and with an exploring syringe greenish-yellow purulent fluid was withdrawn from what was thought to be the pleural cavity. An incision was made immediately, a portion of the eighth rib was removed, and a normal pleura was opened. The diaphragm was very near to the ribs and was elevated, and on palpation a hard rounded area could be made out under it. The costal pleura was sutured to the diaphragm, and on incising the diaphragm a firm convex, apparently bony, mass was exposed, through which the knife could not enter except at a small area half an inch in diameter, whence a pint of pus escaped from a cavity five inches in diameter the walls of which were one-eighth of an inch in diameter and firmly calcified. Portions were taken away by bone forceps, but the free oozing of blood forbade further removal and drainage-tubes were inserted. The pus when examined bacteriologically demonstrated the bacillus typhosus in a greenish fluid consisting of fatty granules, cellular débris, and cholesterin. A month later further portions of the eighth rib and four inches of the ninth rib were excised, and on freely incising the diaphragm the remains of the calcified wall were rapidly excised and they proved to be adherent to the liver, the spleen, the stomach, the transverse colon, and the omentum. The recovery of the patient was uninterrupted. The origin of the abscess was unknown; it must have been of a chronic nature, and probably resulted from a liver abscess or a suppurating hydatid cyst which had become recently re-infected with typhoid bacilli.

Mr. KEITH MONSARRAT read a note on Intussusception of the Vermiform Appendix and described the case of a boy, aged four years, who suffered for a month before admission into the Children's Infirmary from acute pain in the right side of the abdomen coming on in paroxysms. When first seen there was intussusception in the region of the transverse colon. At the operation which followed this was found to be secondary to an intussusception of the appendix vermiformis into the cæcum. Both primary and secondary ntussusceptions were disinvaginated and the boy made a good recovery. Only on one occasion during the five weeks before operation was any blood passed by the bowel and there was no vomiting at any time. The other recorded cases of the condition were analysed and the symptoms were discussed. Two types of invagination were distinguished, one analogous to ileo-cæcal and the other to ileo-colic invagination in respect of anatomical relations. The development of secondary invaginations was also considered. With regard to treatment he limited himself to the consideration of the best method of dealing with such an intussusception where it was irreducible.—Dr. GRÜNBAUM had never during a series of experiments on peritonitis observed peristalsis in the appendix vermiformis, and he considered that it was improbable that invagination could occur as the result of its movement.

Dr. EDGAR STEVENSON described and demonstrated Haab's Electro-magnet for the removal of pieces of iron or steel from the interior of the eye. This instrument, invented by Professor Haab of Zürich, marked a complete revolution in the unsatisfactory treatment by the small electro-magnets of those serious accidents in which the eye contained a foreign body. With it a particle of iron or steel could be drawn from any part of the injured eye (by merely approaching the eye to the point of the instrument) into the anterior chamber, whence it was easily removed. The instrument was bi-polar, about two feet long, 18 inches in diameter, wound in two sections each containing about 2000 turns of insulated copper wire. It was energised by the city mains at 230 volts and took a maximum current of six ampères, thus giving a total force of about two-horse power and a lifting capacity of about half a ton. Dr. Stevenson demonstrated the lines of magnetic force, showing how long and straight they were compared to the short curved lines given off from Snell's electro-magnet; he also showed a piece of steel being acted upon in a tube of gelatin. The instrument would probably be successful in extracting needles, &c., from other parts of the body.—Mr. THOMAS H. BICKERTON added his testimony to the value of Haab's magnet, and referred to a communication made to the *British Medical Journal* of September, 1898, by Dr. Reginald Bickerton, recording the experience gained of the use of this magnet in Professor Fuchs's clinique in Vienna—viz., "Since this magnet has been in use it has never failed to extract a splinter of iron or steel from the interior of the eyeball, no matter how deeply it had been imbedded."

EDINBURGH OBSTETRICAL SOCIETY.

Election of Office-bearers.—Presidential Address.—Extroversion of the Bladder.—Cleidotomy.

A MEETING of this society was held on Nov. 14th, Dr. R. MILNE MURRAY, the President, being in the chair.

The following office-bearers were elected for the current session:—President: Dr. R. Milne Murray. Vice-Presidents: Senior—Dr. S. Macvie (Chirnside); Junior—Dr. F. W. N. Haultain. Treasurer: Dr. William Craig. Secretaries: Dr. J. Haig Ferguson and Dr. William Fordyce. Librarian: Dr. Haultain. Editor of Transactions: Dr. N. T. Brewis. Members of Council: Dr. J. Halliday Croom, Professor J. A. C. Kynoch (Dundee), Dr. James Ritchie, Dr. E. Farr Armour, Professor A. R. Simpson, Dr. J. W. Ballantyne, Dr. G. P. Boddie, and Dr. J. Lamond Lackie.

Dr. MILNE MURRAY delivered his Presidential Address. He alluded to the development of obstetric knowledge and its association with primitive religions. In early times and in primitive peoples the practice of obstetric knowledge would naturally be confined to women. In natural labours their duties would be simple and routine. At first friends and neighbours would perform the kindly office, but soon a separate class would spring up whose special aptitude or experience would inspire the parturient woman with greater confidence. But though the birth of a child was of daily occurrence in a primitive community, yet the progress of pregnancy and labour were shrouded in inscrutable mystery. This mystery and the danger attached to the reproductive process led them to invoke the aid of their primitive religion. The husbandmen noticed the changes in the life, decay, and regeneration of the vegetable world and to them the sun-god was the revivifying influence and the object of adoration. The worship of the generative principle was also present with the shepherd as he noticed the processes of birth, growth, and decay among his flocks and in his family. In various ways and in different localities this idea found special expression in the worship of the sun, the tree, the serpent, and the phallus. These consisted fundamentally in the invocation or propitiation of the generative or procreative principle. Hence arose shrines and temples to tutelary deities where their help could be secured by prayers or their anger averted by sacrificial offerings. It was worthy of note that in ancient Rome the women did not resort to the shrine of Juno, Venus, or even of Demeter, but to that of the chaste Diana, the one virgin goddess of classic mythology. The priest might by an incantation or prayer bring some solace to the woman anticipating with dread her labour with all its peril and suffering. If all was normal the help of the god would be acknowledged with a votive gift; but if disaster or death occurred it was attributed to the anger or curse of an unappeased deity. The priest played the part of physician, and they knew that in Egypt as early as B.C. 3500 there was a class of priest physicians whose duties were mainly concerned with the bodily ailments of the suppliants and especially with those of pregnant women. The earliest compend of their art was to be found in the Hippocratic writings. This focussed the practice of midwifery at the time of Hippocrates (400 B.C.), and his teaching, crude and fallacious as much of it was, represented most of the obstetric art of nearly 2000 years. The study of anatomy at the beginning of the Christian era under the Ptolemies of Alexandria rectified many of the Hippocratic errors, and the influence of this knowledge was seen in the works of Soranus, Galen, Aretæus, and Moschion. But from the seventh to the sixteenth century obstetric art stood still, till in the latter century the school of Salerno inaugurated the teaching of anatomy, and the light shed its influence on the dark practice of obstetrics. Progress was at first slow, but by anatomists like Vesalius, Berengarius, Fallopius, and surgeons like Paré a scientific basis was laid. Further, while ordinary labour was still attended by women the surgeon was more and more frequently called to difficult cases. The seventeenth century was noted by the great development in practical midwifery rendered possible by the invention of forceps, though their use was not general till the early years of the next century.

In the eighteenth century they met with names of men whose contributions to midwifery would be difficult to over-estimate; in England Smellie, Hunter, and Denman; in France Levret and Baudelocque; and in Germany Roederer helped largely to the establishment of obstetrics as a science and art. There were three special epoch-making contributions during the closing century. In 1818 Naegelé published his work on the Mechanism of Labour which had been called the "Euclid of Obstetrics," and enabled the observer of a labour to become a scientific obstetrician and thus to raise himself above the level of the ordinary midwife. 30 years later another epoch was reached when Simpson discovered that anæsthesia could be used to soothe the suffering without interfering with the efficient progress of labour, and also enabled the obstetrician to apply all the resources of his skill on behalf of suffering motherhood. A third epoch was initiated by Lister when he gave the world the principles of antiseptic surgery. Though much had been done for their science and art, yet there were still problems to be solved. Among these were the true significance of menstruation and its relation to ovulation and conception; the function and destiny of the corpus luteum and that perennial subject the structure of the placenta; the true duration of pregnancy; the cause of labour; the nature of the process concerned in the involution of the uterus and the cause of eclampsia. In virtue of the labours of those before them they claimed that for every strictly obstetrical complication which could arise, with perhaps the exception of eclampsia, they had at their disposal a procedure with which they could meet it—that, in fact, there was scarcely a peril which could beset a woman in travail out of which they had not the means of rescuing her. This applied strictly to obstetrical complications and did not include accidental complications, as grave disorders of the heart, the lungs, and the kidneys. Yet in their land nearly 5000 women perished every year in the perils of childbed. Between the years of 1847 and 1856 the average annual death-rate from puerperal fever was 1·89 per 1000; during these years chloroform was coming into use and antiseptics had been scarcely thought of. Between 1875 and 1884 the mortality from the same cause rose to 2·28 per 1000 births. By this time anæsthetics were in wide use and antiseptics were taught and practised to a great extent. Between 1886 and 1895 the mortality had now risen to 2·46 per 1000 and anæsthetics and antiseptics had been almost universally practised. Attempts had been made to account for this great proportion of septic deaths in labour by the error of practice of ignorant midwives. But they were not more numerous and more densely ignorant now than they were 50 years ago. It was different with maternity hospital practice. In the early part of this century the hospital mortality was frightful, but now, as in 1896-97 at the Rotunda Hospital, it was reduced to 0·13 per cent. Why, then, were the results of private practice so far behind those obtained in hospitals such as the Rotunda, and becoming worse and worse in spite of accurate scientific knowledge, improvements in instrumental appliances, and increased practical skill? The explanation would be found in, first, the misuse of anæsthesia, and, second, in the ridiculous parody which in many practitioners' hands stood for the use of antiseptics. With the advent of anæsthesia interference in labour had become more frequent and because it involved no additional suffering operations were undertaken, when really unnecessary, on the demand of the patient or for the convenience of the practitioner. And so complications arose and the dangers of labour increased. Normal labour was a natural process which was best left to itself and the less the patient was disturbed with the paraphernalia of obstetrics before or after the better. But the moment they interfered it became a complex and dangerous process and it was simply because this was constantly ignored that the death-rate of childbed was what it was to-day. The fact must be recognised that the simplest obstetric operation demanded not one whit less of care as to antiseptic precautions than was required of one before opening the abdomen. A bruised or lacerated maternal canal was quite as susceptible to microbic attacks as the peritoneum and probably more so. The practical obstetrician must realise his responsibility that labour was a natural process which in the great majority of cases it was criminal to disturb. Every interference increased the inherent danger a hundredfold, and under this consciousness the obstetrician must bring with him to the lying-in room all that was possible of those principles of antiseptic surgery which had been at the bottom of the triumphs of modern gynæcology. Then they would not have long to wait for the lightening of the dark cloud which hung over them now.

Dr. BERRY HART read a paper on Extroversion of the Bladder. This condition and its allied lesions resulted from fissures occurring in the mesial line between the navel and perineal body. They varied in extent and depth and thus might only affect the skin, resulting in mere cutaneous cicatrices, or they might go deeper and expose the anterior surface of the bladder, or deeper still, and the urethra and posterior surface of the bladder would then be laid open. Similar lesions were the cause of epispadias and sub-symphyseal exstrophy, while the bones might be affected and split pelvis be present in some cases. They were all the outcome of developmental deficiencies and it was of consequence to trace their origin to very early fœtal life. The bladder did not arise from the allantois except at its very apex. It originated from a division of the caudal segment of the primitive gut into two parts by coronal folds; the anterior was the bladder and the posterior was the rectum. Dr. Hart discussed the questions of the tail-gut, entodermal cloaca and cloacal membrane, and especially the relations of the cloacal membrane to gastrulation. Extroversion of the bladder and allied conditions were due to a yielding or separation of the cloacal membrane; the immediate cause of this yielding was not yet known.

Dr. J. W. BALLANTYNE read a paper on Cleidotomy. This was the term applied to the division of the clavicle, and in all or nearly all its indications it was accessory to craniotomy or basilysis. Dr. Ballantyne related a case where after basilysis in a flat and small pelvis there was delay and difficulty owing to the arrest of the shoulders at the brim. One clavicle was cut through with a pair of long strong scissors, and this allowed the shoulder to fall in with consequent diminution of the circumference. The shoulders were then easily delivered by passing a blunt hook into the opposite axilla. Some difficulty was experienced with the passage of the child's hips through the brim of the pelvis. The diminution on the bis-acromial diameter would probably be about half an inch. Dr. H. R. Spencer first wrote about the division of the clavicle when it was necessary to diminish the width of the child's shoulders: he had found it very useful. Different obstetricians, as Phänomenoff, Knorr, Guérard, and others, had since written about this operation. The operation was easily performed by a pair of long straight strong scissors; they were passed up under cover of two fingers of the left hand and the bone with the skin covering it was easily snipped through. The two parts of the clavicle would be felt to over-ride at once if the section had been complete. There was really no danger of wounding the maternal parts, and even the subclavian vessels of the infant need not be injured if reasonable care be taken. On a dead infant Dr. Ballantyne measured the bis-acromial circumferance and found it to be 27 centimetres, with the clavicles compacted on the chest it was 25 centimetres, with one clavicle divided 23 centimetres, and with both 22 centimetres. The indication for the operation was any disproportion between the size of the shoulders and the pelvic canal, and perhaps also to hasten labour in cases requiring urgent delivery.—Dr. MILNE MURRAY, Dr. J. FOULIS, Dr. HAULTAIN, and Dr. W. FORDYCE made remarks on the paper.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The second meeting of the session of this society was held on Nov. 21st, Mr. W. B. Holderness, J.P., the President, being in the chair.—The following gentlemen were elected members of the society:—Mr. F. Treves, surgeon extraordinary to Her Majesty the Queen, Mr. J. Harrison Scott, and Mr. S. Osborn; Mr. R. H. Paramore, house surgeon to the Windsor Royal Infirmary, was elected an honorary member.—Dr. A. J. Anderson showed the following patients:—1. A patient, aged 70 years, from whom he had Excised a third of an inch of the left Vas Deferens for retention of urine due to enlarged prostate. The use of the catheter was discontinued two days after the operation, though it had been necessary two or three times a day before, and the urine had since passed without the slightest trouble. 2. A man, aged 72 years, from whom he had removed a large Tumour of the Testis. The growth of the tumour was accompanied by a good deal of hectic fever which disappeared after the operation. The tumour was exhibited.—Dr. J. K. Watson showed the following case and specimen:—1. A case

of Injury to the Elbow-joint. There was much limitation of flexion and extension, though pronation and supination were perfect. There was much pain due to involvement of the ulnar nerve in the callus. 2. A specimen of a Perforating Gastric Ulcer. The case occurred in a girl, aged 21 years, who had previously only complained of a few dyspeptic symptoms. Death occurred 27 hours after perforation.—Dr. C. R. Elgood showed a case of Ulceration of the Epiglottis presumed to be tuberculous.—Dr. E. B. Hulbert, by permission of Mr. J. R. Lunn, of St. Marylebone Infirmary, showed (1) a specimen of Sacculated Aneurysm of the Abdominal or Thoracic Aorta; (2) a Heart affected with Ulcerated Endocarditis (both the mitral and aortic valves were involved); and (3) several Drawings and Photographs of uncommon diseases, including Osteitis Deformans, Charcot's Disease, Tabetic Feet, Syringomyelia, Arthritis of the Temporo-Maxillary Articulation, and Tuberculous Disease of Various Joints.—Dr. W. F. Lloyd gave a demonstration upon Polarimetry. Having first pointed out the meaning of plane polarised light and demonstrated the movements supposed to take place in the ether by means of a pendulum he described the construction of a Nicol's prism and explained the rotation of the plane of polarisation. He then demonstrated by means of models the structure which the carbon molecule was supposed to have when associated with the power of rotating the plane of polarisation. Having pointed out the importance of the polariscope in the detection of β-oxybutyric acid he described and exhibited a polarimeter, demonstrating the rotation of the plane of polarisation in diabetic urine.—Dr. A. J. Anderson read a paper on Drain-Poisoning in Private Practice. After alluding to Mr. Pridgin Teale's remarks on this subject as early as 1878 he said that in the matter of sanitation we were still far behind other countries, especially America. He next referred to the evils resulting from jerry-building, instancing cases of bronchitis, pneumonia, whooping-cough, and rheumatic fever. As examples of well-known diseases caused by sewage emanations, diarrhœa, gastro-intestinal disturbance, and certain forms of sore-throat simulating diphtheria were mentioned, and he thought that cholera, enteric fever, erysipelas, pneumonia, puerperal fever, and diphtheria had a heavier incidence on persons exposed to their baneful influences. He laid great stress on the importance of self-education in the matter of drainage and the absolute necessity of a personal supervision of the work of plumbers, builders, and even architects. He finally instanced several cases which had come under his notice where some insidious disease had been clearly traced to drain-poisoning and called attention to the lowered state of vitality, entailing neuralgia and other minor ailments observed in those who were more slowly poisoned by sewer-gas.—An interesting discussion followed, in which Dr. E. Casey, Mr. J. Startin, Mr. J. H. Tomlinson, Mr. H. E. B. Porter, Dr. Hulbert, and Dr. G. E. Hale took part.

IPSWICH CLINICAL SOCIETY.—A meeting of this society was held on Nov. 15th, Mr. C. K. Moseley being in the chair.—Dr. R. W. Brogden showed a case of Hodgkin's Disease. The patient was a girl, aged 19 years. The glandular swellings affected both axillæ and both sides of the neck, chiefly in the posterior triangles. Some were of the size of large plums. The parotid, sublingual, and submaxillary glands were unaffected; there was no pain or tenderness or sign of any breaking-down process. There was no abnormality in the abdomen or thorax. The girl was markedly anæmic, the blood showing considerable diminution of the red corpuscles, and she suffered from amenorrhœa. Iron, arsenic, and iodide had so far caused no improvement. Dr. Brogden mentioned two other cases, both ending fatally.—Mr. J. R. Staddon and Dr. H. H. Brown also mentioned cases.—Dr. Brogden showed an old man from whom he had successfully excised the upper jaw for a large Epitheliomatous Growth affecting the Antrum.—Mr. Wynne Davies showed: (1) A woman, aged 50 years, who had quite recently cut a Lower Canine and Two Lower Incisor Teeth; and (2) a middle-aged woman with a Chronic Ulceration at the Angle of the Mouth, probably a rodent ulcer.—Mr. Sinclair showed: (1) A case of Chronic Irido-cyclitis in a young girl without any history of a constitutional cause; (2) a case of Chronic Interstitial Keratitis in one eye of a healthy young woman with complete absence of congestion; and (3) a case of Vascular Pannus without Granular Lids under treatment with infusion of jequirity.—Mr. Moseley read notes of a case of Acute Peritonitis. A man, aged 32 years, was attacked after a hearty meal with abdominal pain and sickness. He vomited two or three times and had several loose motions. This went on during the two following days, and he was first seen on the fourth day, when he said that he had one of his old "bilious attacks, but that it was lasting longer than usual." He was very ill. His tongue was dry and his pulse was uncountable. His temperature was 100°F. His abdomen was retracted all over and was tender on deep pressure. He was given a quarter of a grain of morphia. Five hours later the pulse had improved, but his condition was otherwise unaltered. Later in the evening he vomited once and hiccough came on, and the lower part of the abdomen was found to be tympanitic. At midnight Mr. Moseley performed laparotomy. Foul gas and some thin pus escaped from the peritoneal cavity; the intestines were everywhere moderately distended; the appendix was soft and swollen and contained a hard mass within it. It was removed. The intestine in its neighbourhood was acutely inflamed and it showed numerous patches of gangrene. The patient died five hours after the operation.—Mr. Moseley, Dr. H. H. Brown, and Mr. J. F. C. Hossack commented on the case.

CHELSEA CLINICAL SOCIETY. — An ordinary meeting of this society was held on Nov. 20th, the President, Dr. W. Ewart, being in the chair. — Mr. J. Foster Palmer showed an Unusual Organism, believed to belong to the class of Myriapodes, which had been expelled from the urethra of a male patient.—Mr. E. D. Vinrace showed a Foreign Body also expelled from the Urethra of a male patient. The history of the case was that the patient, who was suffering from symptoms of vesical irritation, had passed for himself a bougie made from an ordinary candle. The foreign body in question was composed of phosphatic material embedded in what appeared to be paraffin wax.—Mr. Noble Smith read a paper on the Conservative Treatment of Tuberculous Disease of the Joints. He described the principles of efficient local fixation of the diseased parts as carried out at the City Orthopædic Hospital. He advocated operation upon the bones in the neighbourhood of diseased joints in the early stages of disease as a means of rendering excision unnecessary, and he expressed doubts as to the necessity of amputation in almost every case of tuberculous joint disease. Mr. Smith exhibited two patients. One was a child, aged two and a half years, in whom extensive disease of the tarsus had existed for which amputation had been recommended while efficient fixation had been neglected. Removal of some diseased pieces of bone, fixation with a simple iron splint, and appropriate and persistent full feeding had been carried out for some months. The sinuses had healed up and the general condition of the child had greatly improved. There was free movement of the ankle-joint and there could now be no question of amputation. The child had also suffered from diseased bone in the face and left hand, but these places also were healing, or had healed up, and the child was becoming quite robust. She seemed likely to be completely cured. The second patient exhibited was an adult male who was suffering from caries in the mid-dorsal region. The disease seemed to have been arrested, although at one time, prior to complete fixation of the spine and good feeding, the disease had been so advanced that the patient had upon two occasions coughed up pieces of bone, evidently from the spine. Mr. Smith urged that complete fixation of joints, removal of diseased bone without the excision of joints and in the majority of cases without even opening joints, together with full and nutritious feeding, constituted the most successful line of treatment.—A discussion followed in which the President, Dr. C. A. Morris, Dr. Vincent Dickinson, Dr. C. J. Harrison, Mr. Vinrace, and Mr. R. Nitch-Smith took part.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on Nov. 14th, Dr. Gilbert Richardson being in the chair.—Dr. S. H. Habershon read a paper on the Diagnosis of Gastric Ulcer, with some remarks on its Treatment and Prognosis. He opened the subject with a short description of the incidence of the disease at various ages, showing by tables the absolute liability of each period of life. He emphasised the fact that some special cause for gastric hæmorrhage, as well as a special liability to perforating gastric ulcer, existed in young females. In

males the liability to the disease gradually rose from infancy to old age. Enumerating the difficulties of diagnosis Dr. Habershon divided the cases into four classes: 1. Cases simulating acute dyspepsia or acute gastric ulcer in which the typical symptoms were wanting and the true nature of the case was suddenly revealed by gastric hæmorrhage or perforation. There was a class also in which the disease was entirely latent and the first important symptom of which was sudden perforation. 2. Anæmic gastralgic cases in which pain occurred not only after food but after any exertion or fatigue. 3. Neurotic cases of irritable stomach, where there was often an exaggerated account of pain, sometimes accompanied with incessant vomiting. 4. Cases of gastric ulcer in the pyloric region, the symptoms of which were always anomalous and where pain occurred at irregular intervals, which was sometimes relieved by food. In these cases vomiting was not always present and hæmatemesis was not a constant symptom. Gastric dilatation was almost always present in the late stages of the disease. Dr. Habershon emphasised the importance and difficulty of diagnosis in these cases and made some remarks upon the methods of examination of the stomach in neurotic cases, laying stress upon the help in mapping out the outlines of a dilated stomach given by the bell sound and the conduction of the second cardiac sound. Dr. Habershon closed with some remarks on treatment, medical and surgical, and upon the indications which aided in making a prognosis.

BOURNEMOUTH MEDICAL SOCIETY.—A meeting of this society was held on Nov. 14th, Dr. Arthur Ransome, F.R.S., the President, being in the chair. There was a large attendance of members.—The resident medical officers of the National Sanatorium for Consumption and Diseases of the Chest, of the Royal Victoria Hospital, and of the Royal Boscombe and West Hants Hospital were elected honorary members during their term of office, and seven new ordinary members were elected.—The President read a paper on Aseptic or Anti-Microbic Medicine. He recalled the fact how widely spread was the anti-microbic principle in medical practice and gave instances of the means adopted by nature to prevent the action of microbes. He thought that the aseptic or anti-microbic treatment might be arranged under the following heads, which were considered in detail: (1) those which were intended to keep the organisms at bay, to prevent them from approaching a wounded surface or from entering any of the portals of the body; (2) those which were designed to meet and kill the organisms or to destroy their virulence either on their approach or after they had affected an entrance; and (3) those which were concerned with strengthening the natural defences of the body against the inroads of pathogenic microbes.

CLINICAL SOCIETY OF MANCHESTER.—An ordinary meeting of this society was held on Nov. 20th, Mr. F. A. Southam, the President, being in the chair.—Dr. A. T. Wilkinson showed some cases of Abdominal Affections.—Mr. E. Stanmore Bishop showed a large Fibro-myomatous Uterus.—Mr. Francis Riley read the notes on a case of Cerebro-Spinal Meningitis and showed the patient.—Mr. J. E. Platt presented a case in which Popliteal Aneurysm had been successfully treated by ligation of the Femoral Artery.—Dr. E. S. Yonge gave a short demonstration on some of the more recent Devices for examining the Larynx in Children.

ROYAL METEOROLOGICAL SOCIETY.—The opening meeting of this society for the present session was held on Nov. 21st at the Institution of Civil Engineers, Great George-street, Westminster, Dr. C. Theodore Williams, the President, being in the chair. Among other papers read was one by Mr. W. H. Dines on the Weekly Death-rate and Temperature Curves, 1890-99. He exhibited diagrams showing the death-rate of the 33 great towns of England and also curves of the temperature at Greenwich. Mr. Dines was of opinion that from the health point of view the English climate was one of the best in the world, and this was proved by the relatively low rate shown in these curves. A pleasanter climate might well be found, but the majority of health resorts to which Englishmen went in the winter had a higher death-rate than London had at the same season and a far higher death-rate than any of the country districts of the British Isles.

Reviews and Notices of Books.

Malaria according to the New Researches. By Professor ANGELO CELLI, Director of the Institute of Hygiene, University of Rome. Translated from the second Italian edition by JOHN JOSEPH EYRE, M.R.C.P., L.R.C.S. Irel., D.P.H. Camb. With an Introduction by Dr. PATRICK MANSON, Medical Adviser to the Colonial Office. With Maps and Illustrations. London, New York, and Bombay: Longmans, Green, and Co. 1900. Price 10*s.* 6*d.*

THE history of all the recent researches in connexion with malaria—from the original discovery of the malarial blood parasite by Laveran in 1880 up to the time of the latest investigations establishing the mosquito-malarial theory—makes up one of the most original and interesting chapters in the record of modern scientific investigation. It has revolutionised our views in regard to malaria. Researches which have been worked out with so much patience and subtle skill, have established a causal connexion between malarial disease in the human being and the anopheles mosquito not only as a carrier but as an intermediary definitive host of the malarial parasite during an important phase of its life-history. If the correctness of this view be admitted it seems to follow that the mosquito must be the only means by which malaria is transmitted. The germs of malaria external to man do not live in the soil, but in the body of the mosquito. The story is so curious and interesting that it reads as if it might be a product of the scientific imagination. But it is nothing of the kind; the mosquito-malarial theory has been worked out by an inductive method of reasoning and on the lines of scientific observation and experiment. That the theory may be still incomplete in some respects is only tantamount to saying that progress in all inquiries of a complex nature must be more or less slow and gradual if such inquiries are to include all the facts and phenomena and to account for or to explain such of them as may be really, or only seemingly, in conflict with the theory. The subject has been, and is still being, keenly cultivated, and all things considered it is remarkable how much has been already accomplished. Important additions of a confirmative kind are so frequently being added to our stock of knowledge that even the volume under review does not contain them all.

The causes and consequences of malaria more or less concern everybody, especially the people of the British Empire, who are the most cosmopolitan people in the world. So much has been written regarding the results of the latest investigations that a knowledge of them has become, as it were, common property. Our readers, of course, are acquainted generally with the main facts, and such of them as are more directly concerned with the study or treatment of malarial diseases have kept themselves *au courant* with the progress of our knowledge in this direction. The subject is not merely a matter of scientific interest to members of the medical profession and to the naturalist and to the microscopist. It has a far-reaching practical side to it. The confirmation of the mosquito-malarial theory has not only demonstrated the importance of using quinine for the cure of malaria-infected subjects, but it has already led to the employment of new methods of prophylaxis as regards the genus of mosquito concerned—such as the use of larvicidal agents in pools and puddles, to prevent mosquitoes from breeding in them, and other plans—in addition to those designed for the protection of man against being bitten by them.

All this, with much besides, has been set forth in a very lucid and comprehensive way in Professor Celli's work which has the merit, moreover, of being written in a scientific spirit. There have been a large number of

labourers in this field of scientific investigation. The Italian school has always occupied a conspicuous position in regard to the study of malaria and its members have maintained that position, as Dr. Manson tells us, by being the first to confirm Major Ross's brilliant investigations, and by throwing themselves energetically into the hygienic measures which these researches plainly indicated. The name of Professor Celli has long been honourably associated with a number of other well-known Italian authorities whose names occupy a distinguished position in connexion with the scientific study of malaria and its prevention. Professor Celli now appears as the author of an excellent piece of scientific literary work based upon and setting forth the latest researches and the lessons which they inculcate, and suggesting the best methods of applying prophylaxis.

The work is divided into two parts. The first deals with epidemiology, the second with prophylaxis. It is illustrated by many excellent plates, maps, and plans and is furnished with an exhaustive bibliography of Roman malaria. In Part I. the etiology, the sources of malarial infection, the life of the malarial germs in the environment —in short, the whole life cycle and natural history of the malarial parasite,—the vehicles of malarial infection, and the causes of predisposition or of immunity towards malaria, are well worked out. In Part II. the means to be directed against the infective cause and against the predisposing causes of paludism are discussed in a sound and practical way. How clear Professor Celli can be here is well shown by the translation of his article in the *Policlinico*, which we publish on page 1603.

Die Krankheiten der Warmen Länder. (*The Diseases of Warm Countries.*) By Dr. B. SCHEUBE. Second revised edition. Jena: G. Fischer. 1900. Super Royal 8vo. Pp. 662. Five charts, seven plates, and 32 illustrations in the text. Price 15 marks.

A GLANCE at the work that has been done in the matter of tropical medicine during the four years which have elapsed between the publication of the first and second editions of Dr. Scheube's book shows to what a remarkable degree interest has been roused of late in this department of science. Three journals dealing with the hygiene and diseases of warm countries have appeared, schools of tropical medicine have been established, conferences have been held, and commissions have been appointed to study particular diseases. From another point of view, however, the activity recently displayed by German investigators in this field forms a significant commentary on the ardour with which their country is prosecuting colonial enterprises, and tells plainly of the toll which must be paid in sickness and death by every country which aspires to a "Weltpolitik." Whatever complications may be introduced into the world of commerce and politics by German competition we cannot but welcome German coöperation in the work of combating tropical diseases, especially when it takes the form of such a volume as the one before us. The book is rendered remarkable by the grasp of his subject displayed by the author, by his extensive knowledge of its literature, and by the lucidity of his descriptions. Not less noteworthy is the sense of proportion which prevents him from devoting an undue amount of space to the subjects with which his name is specially associated—a very unusual trait in the writer of a handbook. The author divides his subject matter conveniently into six sections: 1. General infectious diseases—plague, malaria, leprosy. 2. Intoxications—pellagra, lathyrismus, snake-poisoning. 3. Affections due to animal parasites. 4. Diseases of organs—a somewhat vague term which includes not only tropical dysentery and hepatic abscess, but also the sleeping sickness of negroes, amok-running, and lata. 5. External diseases, such as prickly heat, ainhum, mal de Pinto. 6. "Cosmopolitan" diseases.

The first section is, of course, the most important. It begins with a succinct account of the bubonic, septicæmic, and pneumonic types of the plague, and discusses in a few lines the intestinal form, which the author considers a distinct variety. As regards the so-called pestis minor he is inclined to disagree with Mr. Cantlie and to look upon it as a form of climatic bubo and as having nothing to do with the plague. Until the bacteriology of climatic bubo has been worked out, however, it is impossible to speak positively on the subject.

The diagnosis between dengue and influenza, particularly in some epidemics of the latter, is scarcely so easy as the author suggests. The pains in the limbs, the principal characteristic of the former, are, he says, absent from the latter, but a wonderfully close imitation of them is sometimes provided. In the prophylaxis of malaria the author rightly lays stress on the observance of those precautions in the matter of diet, clothing, and architecture which experience has shown to be of value even though they may prove to have been based on an erroneous theory of the etiology of the disease. In the attention paid to the mosquito as an etiological factor these precautions may perhaps be neglected. Into the question of diet Dr. Scheube enters at some length. He commends the practice which obtains in the Dutch East Indies of lunching in native style—i.e., largely on rice and curry—and dining as a European. Whatever the theoretical merits of this plan may be, we doubt if its practical application in the mid-day "rice-table" of the Dutch hotels in Java is an example to be followed except by the fortunate possessors of a Dutch digestion.

The predisposing cause of blackwater fever the author considers to be chronic malaria; the exciting cause may be a fresh attack of fever sufficiently severe alone or when accompanied by the administration of quinine to break down the weakened blood corpuscles. In a suitable case quinine alone may, if given in doses large enough, have the same effect. Unless there be a special idiosyncrasy towards the drug (cases have been observed in which small doses in healthy persons invariably caused hæmaturia) he does not consider that the hæmaturia is set up apart from malaria. As regards framboesia Dr. Scheube treats Mr. Hutchinson's suggestion of the relationship between yaws and syphilis somewhat cavalierly. "To confound framboesia with ..... syphilis," he says, "is scarcely possible," on the ground that the two diseases can co-exist, and that syphilitic persons in all stages of their complaint can be affected with framboesia, and *vice versâ*. The etiology of amok-running is still quite obscure, while to regard lata, which Van Brero defines as "an induced imitative impulsive myospasia," as a neurosis which renders the patient exceedingly susceptible to suggestion seems to be as far as we can go at present in the direction of etiology.

A curious feature of Dr. Scheube's book is that he has excluded cholera from consideration altogether, on the grounds that it is a disease of tropical countries, not of "warm lands," and that it is described in every text-book and handbook of special pathology and therapeutics. After admiring the masterly way in which most of the tropical diseases have been discussed, the first of these two reasons sounds rather quaint, while a glance at the copious literature appended by the author to the chapters on these diseases makes us wonder why in the second reason so invidious a distinction should be made in the case of cholera. Some useful charts will be found at the end of the book which give the geographical distribution of malaria and blackwater fever, of beri-beri, leprosy, filariasis and ankylostomiasis, and some exquisite photographs of leprosy, elephantiasis, and gundu.

Dr. Scheube's work is not only an important addition to the literature of tropical diseases but will be found very

useful both as a text-book and as a book of reference. It is one of the most satisfactory books that we have read for a long time.

The Climatic Conditions necessary for the Propagation and Spread of Plague. By BALDWIN LATHAM, M. Inst. C.E., M. Inst. M.E., &c. Reprint from the *Quarterly Journal of the Royal Meteorological Society*, Vol. XXVI., No. 113, January, 1900. Edinburgh: Printed by R. and R. Clark, Limited. Pp. 57. Illustrated.

THE object of this paper is to find a direct relationship between emanations from the soil and the incidence of plague. By means of a most painstaking and instructive series of charts the author proceeds to prove that the periodicity observable in the mortality from plague in Bombay and other populous centres presents a most striking similarity to the periodicity manifested by soil emanations at corresponding periods. When dealing with facts the author is on safe ground, especially when these facts concern meteorological and statistical questions. The deductions, however, which he draws show a want of appreciation of the laws which govern bacterial life and bacterial distribution. He believes, for instance, that ponderable organic units in the form of plague and tubercle bacilli, as well as the specific germs of malaria and certain lung diseases, can be carried in the gaseous emanations from the soil and thus may infect both man and animals. The climatic conditions which control vapour tensions at the surface of the soil—and consequently the upward or downward direction of the gaseous current—must clearly influence in some degree the health of the human organism and its powers of resistance, and possibly that of the intermediate hosts which participate in the distribution, but it is impossible to believe that the periodicity of plague mortality is directly due to a similar periodicity in the upward current of soil vapours containing the bacillus pestis.

Mycosis Fungoides. By JAMES GALLOWAY, M.D. Aberd., and J. M. H. MACLEOD, M.D. Aberd. London: H. K. Lewis. 1900. Pp. 26. Two Coloured Microscopic Plates.

THIS is a reprint from the *British Journal of Dermatology*. It is a clinical and pathological study of three cases of this rare, interesting, and generally dangerous disease. In two of the cases the patients are still living; the third patient is dead. Examination of the blood showed that in Case 1 it was fairly normal, there being no leucocytosis and no esinophilia as some authors have described. Injection of Coley's fluid was tried in one case with some amelioration of symptoms, there being less pruritus and a diminution of infiltration. One case began with intense pruritus and redness, another with the formation of a small red patch without any symptoms, but the patches increased in number and size rapidly. The third case was under the care of Dr. Stephen Mackenzie. The eruption was at first dry, scaly, and pigmented, followed by slightly raised infiltrations, which ulcerated. No visceral disease was found at the post-mortem examination. Careful histological examination led the authors to the conclusion that the infiltration was chiefly due to connective tissue cell proliferation, first in the upper third of the corium and later spreading downwards, and that the process was that of an infective granuloma. In the epidermis in the early stage there was proliferation of the prickle-cell layer and in the later absorption of it from the upward pressure of the granuloma. In the bacteriological examination the authors were aided by Dr. J. W. H. Eyre. They found organisms, including a variant of Friedländer's bacillus, but their general conclusions were that all the organisms present were accidental and not pathogenic.

The whole essay represents much careful and laborious work, and is therefore a valuable contribution, although the authors, like their predecessors, have not been able to solve the pathological problem offered by this terrible disease.

House Drainage and Sanitary Fitments. By GERARD J. G. JENSEN, C.E. London: The Sanitary Publishing Co. 1900. Crown 8vo, pp. 257. Price 5*s.* net.

ATTENTION to details is generally found to be the secret of success in every undertaking. Possibly there are few subjects where neglect of apparent trifles is so fraught with danger to the community as in work connected with the sanitary surroundings of our dwellings. Mr. Jensen's little book is devoted to detail, and though he tells us little or nothing that is new, still it may be regarded as a valuable addition to sanitary literature. Technicalities being as far as possible avoided, it is rendered as acceptable to the layman as is compatible with the subject. The book is really a compendium or commentary upon the various materials and fittings commonly used in sanitary work and points out their uses, their several defects or advantages, and explains why the author arrives at his conclusions. To the student or those engaged in work of this nature the book will be found exceptionally handy for reference, it being well supplied with simple tables giving various formulæ which are constantly required but too often neglected. There are plenty of capital illustrations and plans and their value is enhanced by a good index.

It is a pity that Mr. Jensen has admitted, although with evident reluctance, the combined slop-hopper and housemaid's sink among his illustrations, unless for the purpose of condemning it. If the use of a slop-hopper is unavoidable it should be fixed in a separate apartment away from that in which drinking-water is drawn. Also, with regard to his condemnation of waste water-closets we would go further and say that such a disgusting arrangement should be abolished altogether. In any situation where they might be considered necessary a dry earth catch (not a pail) could be used with advantage.

Bacteria, especially as they are related to the Economy of Nature, to Industrial Processes, and to the Public Health. By GEORGE NEWMAN, M.D., F.R.S. Edin., D.P.H. Cantab. Second Edition. London: John Murray. 1900. Pp. 397. Price 6*s.*

BACTERIOLOGY grows apace and it is therefore not surprising that original editions of text-books upon the subject have soon to undergo revision and expansion. The first edition of the book before us was issued in 1899 and was reviewed in THE LANCET of Nov. 25th, 1899, p. 1448. We commended it and regarded Dr. Newman's contribution as a valuable addition to the "Progressive Science Series" although we joined issue with him on certain points. In the present edition he has omitted some of the statements upon which we animadverted, while other statements he has modified in accordance with our criticisms. The present edition is an advance on the first edition chiefly in that it contains new chapters on tropical diseases, the bacterial treatment of sewage, and the industrial application of bacteriology. These new chapters are very well written and are fully in accordance with the results of modern inquiry. He describes, for instance, the recent experiments by Dr. Frank Clowes on the efficiency of coke-bed filters, a work which is undertaken, of course, on behalf of the London County Council. Again, he refers to the interesting observations of Dr. A. C. Houston on the bacteriological aspects of this method. The deposit which accumulates on the coke fragments used in the beds at Barking and Crossness proved to contain 1,800,000 bacteria per gramme. Since this quantity of typhoid bacilli, according to Dr. Houston, weighs only 0·0000147 gramme, it is evident that the numbers of living bacteria do not in themselves account in any way for the

deposit. Dr. Clowes found that the deposit consisted largely of woody matters. The chapter on Tropical Diseases is quite fresh and is interleaved with microscopical illustrations of, amongst others, the bacillus of plague and the bacillus of leprosy. A brief account of the rôle played by the mosquito in the propagation of malaria occurs as a reference to recent investigation. The chapter on Disinfection is instructive and though exhaustive enough in a popular work it might usefully have been made to include some of the newer chemical substances now contained in the category of disinfectants and antiseptics. On page 375 it is stated that "potassium permanganate is of course the chief substance in Condy's fluid." We believe that the manufacturers have denied this again and again, and it is fairly common knowledge now that Condy's green fluid is *sodium* manganate, while the red fluid is *sodium* permanganate. It is not easy to write correctly upon bacteriology in popular language, but we think that Dr. Newman has succeeded very well in presenting a clear and intelligent account of the present position of the science. If it had been otherwise there would have been no call for a second edition.

Transactions of the Society of Anæsthetists. Vol. ii., 1899. London: The Medical Publishing Company. Pp. 231. Illustrated.

THE second published volume of these Transactions contains 11 papers or contributions to discussions. While points of interest occur in all of these some lack the originality which usually reveals itself in transactions of a learned society. If transactions are worth publishing they should contain no papers which are without some claim to originality. Professor Ramsay, who, by the way, is misnamed in the contents, deals with Pure Anæsthetics, and although his views concerning the best ways of preventing decomposition in chloroform are not accepted by all practical chemists his paper will be read with interest. The trend of expert opinion seems at present towards believing that the impurities in chloroform are responsible less for the acute than for the remote dangers incident to that anæsthetic. The discussion upon the question, "What anæsthetic should be selected in various conditions?" is one of great interest. It is perhaps to be regretted that there were not more speakers who could find a use for all anæsthetics, each in its particular and appropriate place. The mere personal predilection is generally of less importance to the casual reader than the thought-out arguments of men, which serve to guide him in difficult cases. Dr. H. G. Turney's paper on Post-Anæsthetic Paralysis is extremely good. Although much attention has been paid to this subject abroad, notably in Germany and in France, very little material of value has appeared in this country. The addition of an index is distinctly an improvement to the present volume. No one who devotes himself to anæsthetics can afford to ignore the Society of Anæsthetists or its Transactions.

LIBRARY TABLE.

An Outline Sketch: Psychology for Beginners. By HIRAM M. STANLEY. Chicago: The Open Court Publishing Company; London Agents: Kegan Paul, Trench, Trübner, and Co. 1899. Small demy 8vo. Pp. 44. Price 2*s.*—This little book appears admirably to fulfil the author's intention of an introduction to psychology. It is written in a clear and interesting style and has practical exercises introduced into the text which will be useful both to teacher and to pupil. It may be commended to the notice of any beginner in the study of the elements of psychology, although it is in no sense a manual on the subject, and only gives the rudiments which should first be thoroughly grasped if a student is to obtain a lucid insight into this difficult and fascinating subject.

The Insane in Private Dwellings and Licensed Houses. By J. F. SUTHERLAND, M.D., F.R.S. Edin. Edinburgh: E. and S. Livingstone. 1897. Demy 8vo. Pp. 60. Price 1*s.*—Dr. Sutherland has produced a very instructive brochure on the advantages of the boarding-out system as it is carried out in Scotland, where it has been in use for 40 years, greatly to the advantage of the insane, to say nothing of a vast financial saving. The system has not apparently commended itself so highly to the authorities in England, where only 6 per cent. are boarded out as against 23 per cent. in Scotland. It would seem to us that this method of treatment might be made more use of, at all events as an auxiliary measure for relieving the overcrowded asylums of some of their harmless chronic patients, whose removal would make room for more acute cases which should be admitted to asylum treatment without the delay which so frequently occurs under existing circumstances. The whole subject is one of great importance and all guardians of the poor and others concerned in the accommodation and treatment of lunatics should make themselves acquainted with the contents of this book. Dr. Sutherland lays stress on the fact that since 1857, with an average of 2000 pauper insane in private dwellings, only one grave injury has taken place—a result which certainly compares favourably with the results obtained in asylums. The author's position as Deputy Commissioner in Lunacy for Scotland has given him ample opportunities of forming an authoritative opinion on the subject, and his remarks on central and local supervision and other details in the working of the scheme deserve careful attention. Dr. Sutherland estimates that a judicious extension of this system in England would result in an annual saving of £200,000. He thinks that instead of 5000 something like 17,000 patients might be provided for in this way.

Local Government Law and Legislation, 1899. By W. H. DUMSDAY. London: Hadden, Best, and Co. 1899. Demy 8vo. Pp. 279.—To all whom these Acts of Parliament concern the above volume, which is well arranged and well indexed, should prove of great value. The book is divided into four parts: Part I. recites the Public General Acts of 1899 with a few explanatory notes which might in some cases have been enlarged with advantage. Part II. consists of a Digest of Cases in the Courts alphabetically arranged. Part III. gives a list of Miscellaneous Orders and Circulars for the year ended Sept. 30th, 1899, with remarks on the same. Part IV. is a table of Public Bills in Parliament affecting local authorities which did not become law. The work is designedly a supplement to other text-books and should find a place on the shelves of the busy men who are obliged to keep themselves well informed on the current changes in legislation, as it will obviate the necessity of searching all the original digests and reports and therefore will prove a great saving of time and labour.

The Pathological Statistics of Insanity. By FRANCIS O. SIMPSON, L.R.C.P. Lond., M.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1900. Royal 8vo. Pp. 140. Price 10*s.* 6*d.* net.—As its title implies this work consists largely of tables of statistics and the author is to be congratulated on the admirable manner in which he has dealt with the facts at his disposal. The system on which the observations have been made is that suggested by Mr. W. Bevan Lewis and is most exhaustive. Pages 1 to 48 give Mr. Simpson's conclusions drawn from the consideration of an immense number of post-mortem records made in the West Riding Lunatic Asylum. The suggestion which the author makes that those interested in insanity should pursue their investigations on somewhat similar lines is worthy of careful attention as it is only by the comparison of a very large number of such observations that any results of real value are likely to be obtained. Pp. 48 to 131 contain a series of tables

giving minute measurements of the cranium and brain in different classes of lunatics, with percentages of the abnormal conditions which are found in them, and should be of great use to all medical men interested in lunacy, more especially to those who have opportunities of making necropsies. In the section devoted to General Paralysis the author makes some interesting remarks on the rôle of syphilis as a factor in the causation of this disease, and adduces arguments in support of his contention that its influence has been greatly over-estimated. He says that "in only two males out of 95 paretics examined was any trace of exudative syphilitic process discovered, the lesion in each case being a gumma." It appears that general paralysis is much more prevalent in the north than in the south of England and that the type of the disease is more acute, cases rarely lasting for two years and frequently only for six months. Mr. Simpson does not advance any theory to explain this condition, but states that in his opinion alcoholic and sexual excesses and gonorrhœa are the most important etiological factors. The notes on the Breaking Strain of the Ribs are instructive, confirming Meyer's remarks that there is a tendency to increased fragility in the insane but not in paralytics. Induration of the white substance of the brain is, according to Mr. Simpson, of very rare occurrence and is neither pathognomonic nor pathogenetic of any form of epileptic insanity.

Writ in Barracks. By EDGAR WALLACE. London: Methuen. 1900. Pp. 121. Price 3*s*.—Mr. Wallace dedicates his little book to "the rank and file of the Army Medical Corps, amongst whom I spent six happy years of my life." Comparison with Kipling is inevitable, but we maintain that Mr. Wallace has no reason to shirk comparisons. His ballads deal mainly with South Africa and being in the Royal Army Medical Corps he naturally saw a good deal of the less attractive side of war, a note which is struck in the first ballad. Most of the others are good and one—"The Prayer"—is very good.

The Tale of a Field Hospital. By FREDERICK TREVES, F.R.C.S. Eng. London: Cassell and Co. Pp. 109. Price 6*s*.—This little book, beautifully got up in all the glory of morocco binding, uncut edges, and rubricated headlines and initials, sets forth in Mr. Treves's breezy style the pathos, the heroism, and the sorrows of war. The field hospital was No. 4 Stationary Hospital, so called, we presume, on the *lucus a non lucendo* principle, because it accompanied the Headquarters Staff of the Ladysmith relief column. Some of the matter has previously appeared in the pages of the *British Medical Journal*, but the book as a whole is simply an amplified record of notes taken on the spot. A perusal of its pages will serve only to increase our admiration for the grit of the British army from the highest to the lowest, but we may be pardoned for saying that the most interesting deed of heroism to ourselves is the account in Chapter xxix. of how Major Babtie won the Victoria Cross. The book is well illustrated with reproductions from photographs, and among all the pain and sorrow of the recital the photograph of "Hairy Mary" is enough to bring a smile to the most dolorous countenance. She looks exactly like a mammoth in the rough.

DISPOSAL OF AMPUTATED LIMBS.—At the meeting of the Cardiff Board of Guardians held on Nov. 20th the subject of the disposal of the amputated limbs of pauper patients was again discussed. It was stated that several of the limbs had been buried in the workhouse grounds, others had been interred with the bodies of paupers, and some had been sent to the pathological department of University College, Cardiff. One of the guardians said that a Protestant man complained bitterly on discovering that his amputated arm had been buried with the remains of a young Roman Catholic woman. After a long discussion it was decided that the patients should in future be consulted in the matter.

Analytical Records
FROM
THE LANCET LABORATORY.

STRENBO.

(THE STRENBO CO., 64, CORPORATION-STREET, MANCHESTER.)

THE proximate analysis of this extract was as follows: moisture, 28·81 per cent.; ash, 17·44 per cent.; organic matters, chiefly proteids, 53·75 per cent. The total nitrogen was 8·04 per cent. According to the precipitate obtained on adding saturated zinc sulphate the albumose amounted to 10·12 per cent., while the peptones shown by the coagulation produced on adding bromine water amounted to 3·46 per cent. Considering these results with the fact that only 11·87 per cent. of the organic matters proved to be soluble in alcohol it is pretty clear that "strenbo" contains something more than the mere stimulating constituents of meat. Indeed, the view we take of these results is that this preparation is just as acceptable for its real nutritive value as for its stimulating properties. It contains a small amount of unaltered albumin (0·17 per cent.) and the insoluble proteids amounted to 1·30 per cent. The composition of this preparation is based evidently on the knowledge that ordinary beef-tea is little else than a stimulating fluid, for "strenbo," though it possesses stimulating properties, possesses, too, what is more important, real nutritive properties.

KOLE-SPAR.

(UNIQUE TRADING CO., WARWICK-STREET, ROTHERHAM.)

"Kole-Spar" is described as "the world-renowned coal-saver and consumes all the vitality there is in coal." One package costing 6*d*. saves, it is said, one quarter of a ton of coal. Our analysis disclosed the black glistening mixture to be carbon, common salt, and a little sulphur. The common salt amounted to nearly 85 per cent. In view of this analysis the following statements may be easily accepted: "Kole-Spar can be handled by a child with impunity. It can do no harm to persons or grates and furnaces." In view of this analysis also the following claims may well be doubted: "Kole-Spar destroys coal gas ..... prevents soot and cinders ..... prevents smoke ..... will make a poor quality of coal do the service of the first quality." All we can say is that these latter claims do not coincide with our experience, and that if they did we should be inclined to think that common salt would be just as good as, while it certainly is much cheaper than, "Kole-Spar." The preparation is decidedly novel; we have never heard of it before, but the current high price of coal probably accounts for its introduction.

LIQUID SOMATOSE.

(THE BRITISH SOMATOSE CO., 165, QUEEN VICTORIA-STREET, LONDON, E.C.)

Compared with somatose powder an increased palatability and an easier form for administration are the chief claims made in regard to this preparation. We have reported previously upon somatose powder which for all practical purposes may be said to contain as its chief constituent albumose. This is evident from the fact that the proteids present are practically thrown entirely out of solution on the addition of a saturated solution of sulphate of zinc. Liquid somatose is a brown fluid with a pleasant meaty flavour which may be referred to the addition of a small quantity of meat extract. Liquid somatose is sterilised and we have found it to keep for days without perceptible change in condition or taste, even when kept at incubating temperature. Our analysis gave the following results: water, 44·97 per cent.; mineral matter, 7·49 per cent.; organic matters, 47·54 per

cent. The proteids thrown out by sulphate of zinc amounted to 36·20 per cent. The nutrient value of albumose has already been pointed out in these columns and liquid somatose contains a very rich proportion of this soluble proteid. The mineral matter contained some amount of common salt. This preparation should be found to be of decided value in the sick-room.

(1) HIGHLAND MALT WHISKY; AND (2) COGNAC BRANDY.
(INNES, SMITH AND CO., 83, HIGH-STREET, BIRMINGHAM.)

We have examined the whisky with the following results: extractives, 0·48 per cent.; mineral matter, 0·015 per cent.; alcohol, by weight 39·30 per cent., by volume 46·59 per cent., equal to proof spirit 81·64 per cent.; acidity reckoned as acetic acid 0·024 per cent. The spirit shows excellent characteristics; it is mild and smooth to the taste, and its flavour is evidently derived from malt. There was no suspicion of undesirable alcohols or of the presence of injurious by-products. It is therefore well adapted for medicinal purposes. The Cognac brandy gave the following results on analysis: extractives, 0·725 per cent.; mineral matter, 0·005 per cent.; alcohol, by weight 38·22 per cent., by volume 45·41 per cent., equal to proof spirit 79·57 per cent.; acidity reckoned as acetic acid, 0·039 per cent.; volatile ethers (equal to alcohol) 2·02 parts, per 10,000 by weight. This is a well-matured spirit, soft and acceptable to the palate. It shows also a due proportion of volatile "wine ethers." Though somewhat sweet to the taste it contains no sugar or sweetening agent, the sweetness being due probably to the normal products of distilled wine subsequently mellowed by age. The spirit being undoubtedly pure and of satisfactory origin is accordingly suitable for use by invalids.

(1) SELAMA MINERAL WATER AND (2) SOAP.
(AGENTS, BARCLAY AND SONS, 95, FARRINGDON-STREET, LONDON, E.C.)

Selama water, drawn from a spring in Algeria known as Lake Mouilah spring, presents a somewhat remarkable composition. It is practically a 1 per cent. solution of common salt, but with this mineral is associated an important quantity of silicic acid. Calculated as silica the amount is over 1 part per 10,000 parts of water. On this account the water slightly attacks the glass of the bottles containing it. It is said to possess certain medicinal properties, but to be more especially useful as an application to cuts or wounds or in eczema. It is said also to allay irritation and inflammation arising from insect bites or other causes. We make little doubt that this property is due to some extent to the silica present, since, as is well known, the silicates are powerful antiseptics. Silicate of soda is used, for example, for preserving milk. The other peculiar constituents of the water doubtless add to its antiseptic value in this respect. We have received a pamphlet recording several cases of skin disease under the care of a medical man in Algeria in which distinct benefit was claimed to have been gained by the external application of this water. The water has been tried elsewhere, it is said, with similar results. A soap is prepared containing, it is stated, 20 per cent. of "Selama" water. We do not understand how this can be unless the water was first concentrated, since the soap is very hard and practically dry, although it is of excellent quality.

EAU MINERALE NATURELLE DU BASSIN DE VICHY (SOURCE GUERRIER).
(GUERRIER PÈRE ET FILS, ST. YORRE, PRÈS VICHY, AND E. G. AFFLECK, 36, LIME-STREET, LONDON, E.C.)

According to our analysis this is a mildly alkaline water slightly charged with an excess of carbonic acid gas. The water is particularly soft to the taste. It is related to the celebrated Vichy water which, on account of its alkaline and saline constituents, is recognised to be of value in gastric catarrh and irritation. The sample before us gave the following results upon analysis: total saline constituents, 3·23 grammes per litre, comprising 2·50 grammes of carbonate of soda, 0·35 gramme of common salt, and 0·38 gramme of other salts chiefly of calcium. The water gives distinct evidence of lithium and traces of arsenic. Our analysis is not completely in accordance with that printed upon the label of the bottle in regard to the amounts; we found a smaller proportion of the salts indicated. As it is the water presents an interesting composition, especially in regard to the comparatively rarer constituents, manganese, strontium, phosphate of soda, arseniate of soda, and lithium. It was free from organic matters. It is probably serviceable in certain disordered conditions of the alimentary tract and in increasing the alkalinity of the blood. It is doubtless also of some tonic value owing to the manganese, iron, and arseniate and phosphate of soda present.

VICHY QUINA WINE.
(T. BAUDET, VICHY, AND E. G. AFFLECK, 36, LIME-STREET, LONDON, E.C.)

The analysis of this wine gave the following results: extractives, 13·46 per cent.; mineral matter, 0·35 per cent; sugar, 6·92 per cent.; alcohol, by weight 14·82 per cent., by volume 18·25 per cent., equal to proof spirit 31·99 per cent. The wine is said to contain the natural salts of Vichy water. The reaction of the wine, as we expected, was acid, whereas the salts of Vichy water are alkaline, consisting chiefly of carbonate of soda. We cannot agree that whatever medicinal effects may be ascribed to the salts of Vichy water the same effects may be also ascribed to this preparation. Even were it so the proportion of salts present, as shown in the above analysis, is very small. The wine has a flavour suggesting both cinchona bark and coca leaf. We failed, however, to extract and to recognise cocaine, but we obtained a residue which gave the reactions of the active constituents of cinchona bark. The wine is described as "vin hygiènique, tonique, et fortifiant."

SOZOIODOL.
(H. TROMMSDORFF, ERFURT.)

We have received a beautiful crystalline specimen of the sodium salt of this interesting compound from the above firm. Sozoiodol, which, to give its chemical name, is di-iodo-para-phenol-sulphonic acid, forms an interesting series of salts with the metals, but the sodium salt seems best adapted for medical use. It forms an excellent antiseptic dusting powder. It may be regarded as an efficient substitute for iodoform, with the favourable difference that it possesses practically no objectionable iodous odour.

New Inventions.

THE "MARVELE" MILK BOILER OR STERILISER.

THIS is a very simple and effective device for the satisfactory boiling or sterilising of milk or other fluid. It consists of two saucepans one inside the other, the larger one being provided with studs inside which keep an open space uniformly between the inner and outer pan. The outer pan serves as a hot-water jacket, so to speak, to the inner pan. The inner pan is pierced with two holes so that the liquid contained in it will find its level in the other pan. Steam is generated fairly rapidly in the outer pan, which soon heats the contents of the inner pan. By this method the risk of burning milk is reduced to a minimum. This alone is a very important advantage, for milk if left to boil in an ordinary saucepan invariably gets burnt and acquires an unpleasant taste. The "Marvele" milk-boiler affords a very satisfactory way of sterilising milk or of cooking other fluids. It is possible even to concentrate milk in this boiler without the formation of products having a disagreeable taste. The inventor is Mr. Jacob Brown, of 130, South-street, Longsight, Manchester.

THE LANCET.

LONDON: SATURDAY, DECEMBER 1, 1900.

WHATEVER obscurity may have originally surrounded the outbreak of peripheral neuritis which has now attained the proportions of an epidemic in Manchester and Salford and a large area around these towns, it is now certain that the mischief has arisen from the presence of arsenic in beer. We publish in our issue to-day a special account of the outbreak by Dr. T. N. KELYNACK, who has encountered many interesting cases amongst the very poor people attending the out-patient department of the Salford Royal Hospital, while others have been under his observation in the wards of the Manchester Royal Infirmary. Apparently the mischief has been going on for some months. The cases have been looked upon as simply "alcoholic multiple neuritis." The real cause of the neuritis, however, was traced eventually by Dr. E. S. REYNOLDS to arsenic in beer, and Mr. C. H. TATTERSALL, medical officer of health of Salford, has called the attention of the Health Committee of Salford Corporation in his recent report to the large amount of sickness in the district from this cause. It was clear that the cases were of an altogether exceptional type and the conviction soon became irresistible that the symptoms were due to some special irritant or irritants taken in food or beverage. Most, if not all, of the patients were drinkers of beer in some form or other and accordingly the suspicion fell upon beer, and startling as it may appear arsenic was subsequently found in beer in easily detectable quantity. The clinical aspects of the outbreak are well described by Dr. KELYNACK to whose report there is appended an instructive analytical report by Mr. WILLIAM KIRKBY, F.L.S. Mr. KIRKBY, as will be seen, has found quantities of arsenic in various beers ranging from mere traces up to as much as 0·28 grain per gallon the results being expressed in terms of white arsenic or arsenious acid. These results relate to beers which were examined because they were suspected, but we have yet to learn the extent to which arsenical beer is being sold.

The outbreak is so serious that a very comprehensive investigation must be made. Suffice it to add for the present that Mr. KIRKBY has also turned his attention to certain specimens of brewing sugars; and the result of his inquiry has been that in glucose he found four parts of arsenic per 10,000 parts of the sugar, and in the "invert" sugar—i.e., sugar obtained by boiling cane sugar with acid—he found three parts of arsenic in 10,000 parts of malt substitute. In a communication from Professor DELÉPINE and Mr. C. H. TATTERSALL which we also print in our present issue, it will be seen that these gentlemen report the presence of arsenic in beer, glucose, "invert" sugar, sulphuric acid, pyrites, but not in the hops, preservatives, gypsum, water, whiting, maize, sago, or tapioca. These results are conclusive and may well cause alarm. The surprise is that wholesale poisoning has not previously occurred. One thing is certain, and that is that for years past brewers have employed both glucose and "invert" sugar for brewing beer. Further, these sugars or malt substitutes have been obtained by acting upon starches and cane sugar with sulphuric acid. Further, again, and still more important is it to bear this in mind, ever since sulphuric acid was made from arsenical pyrites arsenic has been a common impurity of the acid. Under these circumstances it is surprising that peripheral neuritis traceable to arsenical poisoning due to the drinking of modern beers made from malt substitutes has hitherto not been observed even in individual cases. It is hardly conceivable that poisoning from this cause can have previously reached the dimensions of an epidemic, as in the present instance. It is said, however, that very large consignments of "invert" sugar from America have recently been employed by brewers in this country, and this may possibly throw some light on the present unfortunate occurrence, which may be attributable to transatlantic sources hitherto unused.

The whole story illustrates the great dangers that may arise from the introduction of substitutes in the course of the preparation of foods and beverages. It would appear that the use of malt substitutes is a matter of expediency rather than of economy. It is a mistake to suppose that the use of "invert" sugar, glucose, or cane sugar is cheaper than their equivalent of malt. Beers brewed with sugar are more brilliant and stable than beers brewed with malt alone. Moreover, the beers so obtained are of a lighter character and have a more distinctive flavour. The materials used for the preparation of glucose in this country are maize, sago, and rice. These are boiled with dilute sulphuric acid, either with or without pressure, the starch in them being thus rapidly hydrolysed into dextrine and maltose, which in turn are rapidly displaced by glucose. The resulting acid liquid is neutralised with whiting and the main portion of the gypsum thus formed is allowed to subside. The liquid after filtration is finally concentrated. It is clear from the details of this process that any arsenic occurring in the sulphuric acid would remain in the syrup or in the ultimately crystallised product. Arsenical poisoning has before been traced to the use of sulphuric acid in the course of manufacturing certain preparations intended for human consumption. About five months ago, for example, we reported that arsenic had been found as a common impurity of phosphate of soda, which impurity had been derived from the sulphuric acid employed in the manufacture, and it appeared also that phosphate of soda formed the basis of a popular effervescing drink. The consumption of phosphate of soda, however, is comparatively trivial and unimportant, whereas in the case of beer the danger of employing impure sulphuric acid in the elaboration of products intended for human consumption on a large scale is specially obvious. It seems to us that this epidemic affords a fresh and startling argument for the interdiction of substitutes, unless very definite steps be taken to secure the absolute purity of such substitutes. It is noticeable that the Pure Beer Committee of four years ago did not suggest the awful possibility of an epidemic of arsenical poisoning arising through the use of malt substitutes in beer. This

Committee was directed to inquire into and to report upon, the question whether legislation is required "*to prevent the use of deleterious substances in the manufacture of beer*, and whether the materials of which beer may be composed can be defined by law without undue interference with the liberty of brewers to use wholesome materials in brewing." The italics are ours. Of course, the Committee directed its attention mainly to the wholesomeness of the substitute, without paying apparently the slightest regard to the processes by which such substitutes are made and the possibilities of poisonous materials gaining access to them. It seems to us that the Committee has missed an important aspect of the subject of inquiry. But it is curious how exactly the words contained in the reference to the Committee apply to the present unfortunate epidemic of arsenical poisoning in Manchester and its neighbourhood.

The question remains when and where will the mischief cease? Legislation, we most emphatically agree, is undoubtedly required "to prevent the use of deleterious substances in the manufacture of beer." The interests of the public health urgently call for it, and it is the immediate duty of the Government to institute a thoroughly exhaustive inquiry. The question must be settled as to who is culpable and what course must be adopted to render a recurrence of disaster absolutely impossible.

THE discussions which are now constantly taking place in Ireland in reference to university education and the feeling that important changes, fraught with far-reaching consequences, may at any time be brought forward, are having a most baneful effect on higher collegiate work in that country. As a natural result of the present uncertainty the sons of many Irishmen who would under ordinary circumstances be educated at home are being sent to English or Scottish Universities, because their fathers, remembering how suddenly they, through Mr. DISRAELI'S action in destroying the Queen's University of Ireland in 1879, were left as graduates of a non-existing university, are determined that their sons shall not through coming legislation be treated in a similarly scandalous way. Again, owing to the same causes, the present Queen's Colleges, which are in all respects Government institutions, are being starved. Friendly statesmen of both political parties feel that as soon as they attempt to propose increased grants for any of these educational centres the Nationalist Members of Parliament will offer every form of opposition until the Roman Catholic demands have been met.

The annual grant paid by Parliament to the Queen's Colleges of Belfast, Cork, and Galway remains the same in amount as it originally was when in 1849 these institutions were established by Sir ROBERT PEEL; but this endowment is totally inadequate to cope with the increased demands now made for teaching new subjects which were not required in former years. We can best illustrate this by examples from the medical faculty. In two of the colleges there is no separate professorship of physiology, the chairs of anatomy and physiology being combined; in Belfast the same state of matters existed until 1893, when, through the munificence of Mr. DUNVILLE, D.L., the chai of physiology was established and endowed. In none of the three colleges is there any endowment for a professorship of such an important subject as pathology; the lecturer receives the students' fees. But in Belfast, there is a pathological laboratory. Again, in none of the three colleges is there a chair of public health, and the attempts to meet the demands of the times in this department—so useful to the nation—are certainly anything but efficient. There is no provision in any of the departments of the medical curriculum for demonstrators or assistants; they must either be dispensed with or the professors must provide them out of their own resources. New laboratories are needed in many of the departments, such as biology and pharmacy. In the Belfast College in the year 1891 the Board of Works commenced, under the sanction of the Treasury, the erection of a building for the department of chemistry, but after spending £5500 the Treasury declined to give the remaining £3200 for the completion of the building unless a local contribution was made towards the object. The Government's action was intended, no doubt, to prove a strong stimulus to local activity, but it has unfortunately resulted in the chemical department of Queen's College, Belfast, still remaining in an unfinished condition. With the great progress in medical science one new department after another has to be established and the necessary expenditure incurred has to be met by the College authorities out of the same small annual financial grant that they were receiving years ago, for the Government absolutely refuses to make any new and additional endowment.

The argument that Ireland should rise to its obvious duties and contribute more to the funds of the local colleges has force, but, on the other hand, the reply is an obvious one. The inhabitants before they will give money to the local colleges, must be assured of the stability of the institutions, and of the probable permanence of the policy in accordance with which they were founded. The fact that these colleges are State colleges militates against them. The Belfast citizens, for example have no voice whatever in the government of Queen's College, Belfast. There is no senate or board of governors (as is the case in the Owens College, Manchester, and in Birmingham) in which some of the leading citizens have a share, and consequently it is only natural that they do not take that special personal interest in the College which they certainly would had they some responsibility for its management. Even under the existing circumstances the citizens of Belfast have given thousands of pounds to the College, and being proud of their rich and prosperous city, they would certainly do more towards endowment if they felt sure of their ground. But that is what they cannot feel. The State established the Queen's Colleges in Ireland and entirely controls them. It should equip them properly, and it does not. Medical science in particular suffers under the present conditions, because the enormous progress that has recently taken place in medicine calls for increased endowment.

WE should hardly be disposed to reckon office-boys as a class among pioneers of sanitary progress. To an individua of this order, however, seemingly belongs the honour of having initiated a widespread and much-needed agitation for sanitary reform in no less a place than the Royal borough of

Windsor. In June of last year the youth in question handed to representatives of the local press a report by the medical officer of health of the borough, Dr. E. CASEY, which was to be presented and considered at the next meeting of the Windsor Town Council. After that meeting the press accounts, which set out Dr. CASEY'S report in full, caused great astonishment to certain members of the town council, who learnt for the first time that the medical officer of health had been calling attention to the grossly insanitary condition of a large group of cottages in Windsor, but that all his observations on this subject had been omitted when his report was read at the town council meeting. Inquiries followed, from which it appeared that, failing specific directions from the Sanitary Committee, discretion as to what parts of reports by the medical officer of health should reach the town council and the public was habitually exercised by the town clerk. Application was then made by certain residents to the Local Government Board for inquiry.

As a result, that Board has lately issued a report, which we review more fully elsewhere in our present issue, by Dr. H. T. BULSTRODE, who has not only locally investigated the current methods of sanitary administration, but has studied in detail the various sanitary shortcomings of the borough. This report has created, as no doubt it was intended to create, a great stir in Windsor. The inhabitants have had brought to their notice that their town is lacking in many essentials to the healthy life of a modern community which can be provided as easily for their ancient borough as for newer towns of much less importance. For example, the borough is without an isolation hospital or a disinfecting apparatus, and this notwithstanding the special need for measures to control infectious disease in a place which is at once a Royal residence, a military station, and a resort for visitors from all parts of the world, while it is also close to one of the most famous public schools of the country. In addition, Windsor has now been given officially to understand that its sanitary administration in ordinary day-to-day matters has been weak in the extreme; that the by-laws of the place are unknown even to officials of the town council; that their town abounds in nuisances due to accumulation of refuse near to dwellings; and that the conditions under which the poorer classes live are in many cases about as bad as they can be. Rows of houses which by reason of their dilapidation, inside and out, and of their unwholesome surroundings should long ago have been condemned as unfit for habitation, have year after year been permitted to be occupied, notwithstanding representations more or less forcible by the officers of the sanitary department. So persistent have been the influences exerted against improvement in such matters that these officers have come to look upon reform as hopeless, and, in the words of the report, have "become disheartened" and have learnt to adopt "apologetic attitudes." Notwithstanding much indignation which has been expressed at Dr. BULSTRODE'S indictment, there are signs that it has had effect. Already, it would seem, something has been done by way of amendment by the town council, which, we are glad to learn, has after the recent elections been reinforced by new members who have pledged themselves to comprehensive measures of reform. Having regard to the circumstances set out in Dr. BULSTRODE'S report, the resignation of the town clerk, which was recently announced, is, from the view of sanitary progress, not wholly to be regretted, notwithstanding that Mr. LOVEGROVE has doubtless in other respects established substantial claim to the gratitude of the people of Windsor. Concerning the fate of the office-boy we are ignorant; but as a happy accident enabled him to inaugurate great benefit to his fellow-citizens we should be glad to learn that he has been rewarded.

Readers of THE LANCET of 1885 will find in Dr. BULSTRODE'S official report ample justification of the action which in that year we felt it our duty to take when we brought before the public the backward state of sanitary affairs in Windsor. As a result of careful inquiries by a Special Commissioner of THE LANCET we then called attention to a number of conditions urgently demanding remedy, which, 15 years ago, could readily have been applied by a town council willing to exercise a reasonable amount of determination and common-sense. In particular we urged on the local authorities the need for careful investigation of the unhealthy and degrading conditions under which a large portion of the people in Windsor were living and for efforts to ameliorate them. The Rev. ARTHUR ROBINS, then rector of Holy Trinity, Windsor, whose acquaintance with the moral and social conditions of the Windsor poor was intimate, aided our efforts by the most determined advocacy, but our warnings, we fear, in the long run had small effect. In particular, the house-to-house survey which we suggested as the first essential to sanitary progress was not adopted. The town council had learnt "how not to do it," and continued content in applying that knowledge. Their officials at that time indeed furnished us with admirable examples of the "apologetic attitude" which since has so impressed the inspector of the Local Government Board. We recall these facts in no spirit of self-complacency, but because they may serve to remind the people of Windsor and their representatives, now suffering from another public exposition of the shortcomings of the borough in a sanitary sense, that the best way in the long run is to face, and not to ignore, the difficulties which beset reform. We are glad to learn from local sources that there is a prospect that in future the ostrich-like policy from which Windsor has suffered in the past will be definitely abandoned.

Annotations.

"Ne quid nimis."

BACTERIOLOGY AND RELIGIOUS RITES.

THE fact that bacteriology is quite a modern science, whereas religious rites and ceremonies date back as far as historical records will allow us to go, sufficiently explains the want of harmony between them. It would, indeed, have been a proof of marvellous prophetic intuition if those who first initiated religious ceremonies had foreseen and prepared for discoveries to be made many centuries later. Several of our correspondents have expatiated on the risk attending the promiscuous use of the communion cup. This, however, is far from being the only risk of this description. The holy water in Roman Catholic churches is quite as serious a matter. The shallow

shell-shaped receptacle is placed barely three feet or so from the floor, so that the dust stirred up by the feet or shaken off from the persons who pass by readily falls into it. Innumerable fingers, not always scrupulously clean, are dipped into the water. Also, it is just at the moment of danger and trouble that the faithful are most prone to resort to their church for prayer and consolation. Coming straight from the sick bed of some loved parent or friend, can we expect that the hands are always thoroughly disinfected before they touch the holy water? In Spain especially, and during the great cholera epidemic of 1885, we have noted that the holy water was absolutely dirty and living organisms could be seen with the naked eye, so what the microscope would have revealed may well be imagined. Now the fingers convey this water to the forehead and breast of the devotee, and of course the mouth might also be touched with the same fingers. But we do not see that there would be any lack of reverence shown if this holy water was changed more frequently, nor are we aware that it would be a sacrilege to mix it with some strong antiseptic solution. Again, at the Ahmed Mosque of Constantinople there is a small piece of the black stone brought from the Kaaba of Mecca. Against this piece of stone the true believers come and rest their heads for a considerable time. By so doing it is supposed that various illnesses can be cured, and as there are certain affections that can be favourably affected by the force of suggestion the results sometimes attained seem to confirm this superstition. But though a hard stone is less dangerous than water and germs of disease deposited upon its surface would soon be oxidised, still patients following each other in rapid succession might convey to one another pathogenic microbes. The same may be said with regard to the kissing of the toe of the bronze statue of St. Peter at St. Peter's, Rome. Would it be too much to ask that this stone, this bronze toe, and other similar objects of reverence and adoration should be frequently wiped with a rag moistened in an antiseptic solution? Why should science and religion be divorced one from the other? If we have been endowed with the intelligence to foresee a danger, may we not, with all due reverence, take the necessary precautions to ward off this peril. With regard to the communion cup, Count Leo Tolstoy, in his recent novel "Resurrection," decribes the celebration of the Liturgy in the chapel of a Russian prison. Here the priest cuts the bread into little pieces and dips them in the cup containing the wine. Then with a spoon he places the piece of bread and wine into the penitent's mouth. Thus there is no drinking out of the cup and it would be much easier to have a clean spoon for each communicant than a separate cup. This is the general practice of the Orthodox Greek Church and one which lends itself better to sanitary precautions than that of the English Church and her sister communions as we have already pointed out.[1]

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

"IT is desirable that further help up to a minimum of £25,000 may be given before Dec. 15th next" is the concluding sentence of a special appeal which has been issued with the third annual report of the Prince of Wales's Hospital Fund for London. Although the report is a very satisfactory one from the point of view of work done the receipts do not reach the progressive standard which the needs of the hospitals call for. This is especially regrettable at a time when the hospitals of London are suffering from a lack of financial support by reason of the heavy drain upon the charitable purse in other directions. The total sum distributed in 1899 amounted to £42,000, with a total cost of management and collection of about 3¼ per cent. Of this sum £26,000 have been given as annual grants and the remainder as donations. Deducting from the total sum £1000 which were given to convalescent homes, and the balance of £41,000 compares with £31,500 of the previous year. The sum collected in the Diamond Jubilee year was £56,826. The report of the distribution committee states that arrangements have been made for the re-opening of 45 beds next year. This number added to the figures of the two previous years gives a total of 287 beds made available to the poor of the metropolis by the agency of the fund. As the demands upon the hospitals will be greatly increased by reason of the returned sailors and soldiers from South Africa, independently of the ordinary increase which now takes place year by year, every effort should be made to obtain the sum which the executive committee of the fund appeal for, and now that the fund has shown itself after three years of usefulness to be able to work with a minimum of expenditure not only subscriptions and donations but legacies ought to fall to its share. With regard to the important question of the rating of hospitals the report of the general council of the fund states that "in the course of the present session a petition will be presented to Parliament by the Central Hospital Council calling attention to the heavy rating of hospitals. In support of this, on behalf of the fund, a petition has been forwarded in accordance with the instructions of the executive committee, expressing the sympathy of all concerned, and their desire to see the rating of all recognised London hospitals abolished." Included in last year's list of subscribers and donors are the following annual subscriptions:—The Prince of Wales, £105; the Princess of Wales, £25; Princess Victoria of Wales, £5; the Duke and Duchess of York, £21; Princes Albert and Edward of York, £2 2*s.*; Princess Victoria of York, £1 1*s.*; the Duke and Duchess of Fife, £50; the Duke and Duchess of Teck, £10; Captain Prince Louis of Battenberg, R.N., £1 1*s.*; Princess Louis of Battenberg, £1 1*s.*

THE APPOINTMENT OF HONORARY MEDICAL OFFICERS TO INFIRMARIES.

IT is much to be regretted, at a time when *esprit de corps* of the profession is in the ascendancy, that antiquated methods of election of honorary officers to our infirmaries should still exist. When a body of subscribers, as well as presidents, vice-presidents, and boards of management, have to be solicited for votes it is canvassing, and canvassing of a distasteful nature which might deter well-qualified candidates from entering the field. We would be the last to deprive anyone of the franchise or to remove any privileges which subscribers may enjoy, but surely these persons might depute the election of honorary officers, when occasion requires, to a body elected by themselves. At an annual meeting when the subscribers are assembled after electing president, vice-presidents, and board of management, surely an elective body could be appointed from among the subscribers to act for the following year, and such subscribers, together with the board of management, would form a body suitable for the purpose. In some cities and towns we believe that this has been done and that it works well; why cannot every town that is proud of its hospital do the same? We are prompted to make these remarks in consequence of the election of an honorary medical officer to the Royal Albert Edward Infirmary, Wigan, which took place on Nov. 14th. Three eligible gentlemen had been nominated and provision had been made for taking a poll if necessary. One of the candidates (Dr. F. Rees) who had the unusual privilege of addressing the subscribers (electors), questioned the right of many of the gentlemen present as representatives from the works (because it was alleged the

[1] THE LANCET, Oct. 13th, 1900, p. 1088

working men themselves had not elected them) to vote, and some acrimonious remarks were made. He also moved the adjournment of the meeting, but this was defeated by a large majority. An allegation having been made that the board of management had not allowed the proper representatives of works to be on the list or register of representatives sent in each year, the chairman of the board of management said that he had no knowledge of any name being on the list of voters that ought not to be on. He understood from the secretary that the names of the works' representatives were sent in at the proper time and put on the register, and he took it from a business point of view that those names were those of the nominees of the works from which the money came. As far as the board of management was concerned he did not agree with the speaker (Dr. F. Rees) that these men had been improperly elected. It was for the men at the works to put the matter right themselves. He thought that the method of electing a medical officer was not very dignified and it might very well be left with an elective body. It would be more dignified for the profession and more useful to the institution. The election afterwards proceeded by a show of hands, the successful candidate having a large majority. A poll, however, was demanded, but on the proxies being handed in it was withdrawn.

AN INTERESTING ACTION FOR MALPRACTICE AGAINST A DENTIST.

THE last issue of the *British Journal of Dental Science* contains a short account of an important action tried before a jury in the Lord Mayor's Court against a dentist for alleged negligence. The facts of the case, as gathered from the report and also a letter from the defendant, are briefly as follows. The tooth in question was a mandibular molar. The cavity in this was dressed with carbolic on a Tuesday and on the following Thursday the nerve canals were cleaned out and filled with a dressing of carbolic acid and iodoform. A cement filling was inserted and the plaintiff was told to return if any pain or trouble occurred, which he did not do. It was only intended to retain this tooth for a few weeks. The same night pain commenced and by the following morning when seen by his medical man there was so much swelling as to cause trismus. His temperature was stated to be 104° F. and it was also said that it was impossible to remove the tooth. The face was poulticed on the outside for three days and incisions were made both inside and outside the mouth. The tooth was allowed to remain for three weeks and even during this time no attempt was made to remove the filling. The dental surgeon who gave evidence in support of the plaintiff stated that it was wrong practice to put a cement filling in a tooth if the nerve was dead, and stated that such teeth required to be dressed with antiseptic wool sometimes two or three times before being filled. He also stated that with a temperature of 104° it would have been wrong to administer nitrous oxide and to remove the tooth. Other evidence was given on both sides and a verdict was returned for the plaintiff with £40 damages. This case is of great interest because if such a decision could be upheld there are few dentists who would not be liable to be mulcted in damages in performing such an operation, since septic inflammation must always be regarded as a possible complication. The operation as performed by the dentist was a perfectly justifiable one; he cleared the pulp canals of septic matter, placed in a dressing of antiseptics, and sealed them with a plastic filling which he would have removed if pain had occurred. This was stated to be wrong practice by the dentist called in support of the case, but it is nevertheless the method adopted by the best dental practitioners of the day, while the method stated as correct by the dentist is one which, perhaps, may be regarded as a relic of the past. In our opinion the defendant was in no way to blame. A temperature of 104° is no bar to an anæsthetic if an operation is necessary. Still further, there is no reason whatever that should have prevented the removal of the tooth. If a consultation had taken place between the dentist and the medical practitioner in all probability the tooth would have been removed at an early date and the burrowing of pus prevented. The treatment, too, of applying poultices to the outside of the face is open to much criticism. In the report before us there is no mention of an appeal having been applied for, but it is to be hoped that the case may be heard of again before a higher court and with evidence given by a practitioner holding not only dental but also medical qualifications.

GLASGOW UNIVERSITY CLUB, LONDON.

THE winter dinner of this club will be held at the Café Royal, Regent-street, on Wednesday, Dec. 5th, at 7.30 P.M., Professor Sir Hector C. Cameron, M.D. Glasg., in the chair. Lord Lister and Surgeon-General J. Jameson, C.B. (Director-General of the Army Medical Service) have promised to attend, and amongst the club guests will be Major Babtie, R.A.M.C., whose conspicuous bravery at the battle of Colenso in the early part of the present war secured for him the Victoria Cross. Major Babtie, who is a graduate of Glasgow University, has just returned from South Africa, and we anticipate that his welcome home by his old friends and fellow-students is likely to be a hearty one. Members who intend to be present at the dinner should communicate immediately with the honorary secretary, Mr. Norman MacLehose, 13, Queen Anne-street, Cavendish-square, W.

THE DIAGNOSTIC VALUE OF KERNIG'S SIGN IN CEREBRAL AFFECTIONS.

DR. PAUL ROGLET in his *Thèse de Paris* (1900) makes an important contribution on the pathogenesis and the diagnostic value of Kernig's sign in cerebral affections. In 1884 Kernig described the presence of a certain clinical sign as characteristic of meningitis—viz., the inability to extend the knee fully when the patient was seated in bed with the thigh extended at right angles to the trunk. The cause of this functional inability was due to a contracture of the flexors of the knee. When the patient, however, was allowed to lie on the back this contracture disappeared and complete extension of the leg at the knee-joint was possible. Dr. Roglet made a careful series of observations on this point in 35 patients and has concluded that the sign is not exclusively present in meningitis but may be met with in other forms of cerebral irritation. In 85 per cent. of cases of meningitis, whether due to meningococci, pneumococci, streptococci, or staphylococci, it was easily elicited. In tuberculous meningitis it is somewhat less frequent. It makes its appearance when the disease is well-established, but it varies in intensity from day to day, and a case is recorded by Dr. Roglet where it was found to be present in a patient convalescing from cerebro-spinal meningitis. Spinal meningitis need not be present co-extensively with cerebral to give rise to this sign, for in one fatal case at least of meningitis followed by necropsy no indication of spinal implication could be found though the sign was easily elicited during life. The pathogenesis of this sign is thus explained. In a normal and healthy subject seated in a bed and with the legs fully extended and at right angles to the trunk the flexor muscles of the knee are stretched to their utmost and their elasticity is thus completely exhausted. If, however, owing to some irritation of the spinal (motor) nerves supplying these muscles, there is produced an increase in the tonicity (hypertonicity) of the muscles the result is that

the elasticity of the muscles is lessened, their length is diminished, and their fullest extension is no longer possible. Indeed, under such conditions as meningeal and nervous irritations, not only does this result appear in the form of Kernig's sign, but the attempt to suddenly extend the knee (and with it the flexor muscles of the knee) results in a momentary augmentation of the irritability of the muscle and a consequent slight increase of the contracture. This last condition is familiar to us under the forms of ankle-clonus and rectus-clonus, both of which may result from cerebral lesions followed by descending degenerations of the pyramidal tract.

BRITISH CONGRESS ON TUBERCULOSIS.

THE British Congress on Tuberculosis will be opened in London by the Prince of Wales on Monday, July 22nd, 1901, and will be continued on the following days of the week. The Congress will have four sections—pathology, medicine, State medicine, and veterinary medicine—which will meet on the mornings of Tuesday, Wednesday, Thursday, and Friday, and Saturday will be devoted to excursions. Further particulars can be obtained from the honorary secretary-general, 20, Hanover-square, W. The subscription for members of the Congress will be £1, which will include a copy of the Transactions. A fund is being formed to defray the expenses connected with the Congress, which must be considerable; it already amounts to £500, but at least five times this amount will be required.

THE HOUSING OF THE POOR IN BERLIN.

IN Germany, as in England, the development of modern industries has caused a widespread migration of the rural populations to the large towns. The result has been over-crowding, which is denounced by all the sanitary authorities of the Empire as a great public danger. Of course, the rents have gone up by leaps and bounds, and now the poor man can hardly lodge himself and family. Dr. Schwalbe, of the Berlin Statistical Bureau, calculates that a man with an income of £45 per annum has to give 24·10 per cent. of this income for rent. A man whose income varies from £45 to £75 pays 22·11 per cent. of his income for rent, while a person with an income of £1500 only pays 9·20 per cent. for rent. At Hamburg the position is even worse, for there out of incomes of from £30 to £60 no less than 25·5 per cent. goes for rent, while some 30 years ago the proportion was only 18·8 per cent. Under such circumstances it is not surprising to hear that no inconsiderable section of the population is homeless. A census was taken in 1895, and then it was found that in Berlin 77·2 per 1000 men and 39·2 per 1000 women had no permanent home. Herr A. Braun, a member of the Berlin Sanitary Board, says that children of both sexes are often obliged to sleep in the same room as their parents and that lodgers are sometimes taken in and the children have to sleep in the same beds as these lodgers. Modesty and decency cannot survive under such conditions. The average infant mortality in Berlin is 31·5 per cent., but while it is only 8·6 per cent. in the wealthy districts it is 52·27 per cent. in the poorest districts. The vital statistics of Breslau, of Munich, and of other towns all tell the same tale; and not only is the health of the populations affected but their moral condition is likewise deteriorating. The herding together of the factory hands in large towns has, we are told by more than one authority, produced a state of barbarism and bestiality that exceeds anything known before. There is a self-evident analogy between these complaints from Germany and the terrors of Hooliganism in England. The poor agricultural labourer may be stupid and dull, but if the poorer sections of the labouring population of the large towns are more quick-witted their temptations are much greater and they become much more vicious. This is a sanitary and a social problem arising from modern industrialism which must be faced by all great commercial communities, whether English, French, German, or American.

MEDICAL OFFICERS FOR THE HIGHLANDS AND ISLANDS OF SCOTLAND.

WE publish three advertisements which have appeared in a Shetland paper:—

WANTED by the School Board of Walls, Sandness, &c., Shetland, a certificated Teacher (Male or female), for FOULA Public School, Salary £70 per annum, with house and garden rent free. Applications with testimonials to be lodged with the Clerk of the Board, on or before 3rd December next.

WANTED by the Parish Council of Nesting, &c., Medical Officer for Lunnasting, Whalsay and Skerries. Salary, £25 per annum, to include medicines to Paupers, with fees for Vaccination prescribed by Sect. 2 of the Vaccination Act, and fees for quarterly visits to Pauper Lunatics in private dwellings.—JOHN IRVINE, Clerk. Whalsay, 14th Nov., 1900.

WANTED, by the Parish Council of Nesting, &c., Medical Officer for Nesting District. Salary, £15 per annum to include Medicines to Paupers, with Fees for Vaccination prescribed by Sect. 2 of the Vaccination Act, and fees for quarterly visits to pauper lunatics in private dwellings. JOHN IRVINE, Clerk. Whalsay, 14th November, 1900.

They show very well the relative values which are placed upon the services of a medical man and a teacher certificated to teach elementary education. Now though we do not for a moment suggest that the teacher's salary is any too much, for even including the house and garden it is only about as much as a butler gets, yet the contrast between the sum which the teacher gets and that allotted to the medical man is absurd. The teacher has regular hours; his clients come to him; and he is not compelled to rise at all hours in all weathers to find his way across bogs and seas with life or death perchance depending on his actions. Presumably he will get at least a month's holiday and no one will have to do his work while he is away, for there will be no work to do. We can only implore candidates for the medical posts to make very sure of three things which we have already insisted upon before—notably in our issue of Nov. 10th—namely, fixity of tenure, a free annual holiday, and adequate salary.

INSANITY AND GLYCOSURIA.

DR. DAVID BLAIR of the Lancaster County Asylum states in the *Journal of Mental Science* for October that glycosuria, though it might be expected *a priori* to be common, is really quite rare, among the insane inmates of public asylums. Dr. Hale White found traces of sugar in the urine in only 2·6 per cent. of the patients in the Surrey County Asylum. Glycosuria is relatively prevalent among nervous and highly emotional races, while it is rare in stolid and unemotional nations such as the Chinese. Worry and anxiety in highly intellectual individuals will produce temporary glycosuria. In lunatics who, having already passed through the storms and stresses of emotion during the prodromal stages of insanity, are thereafter admitted into asylums the causes favouring glycosuria are passing, or have passed away, and hence sugar in the urine is seldom met with. Two cases illustrative of the above facts are recorded, one that of a young woman who had been jilted by her lover and the other that of an elderly woman, aged 52 years, who had been troubled with domestic worry, in each of which the period of acute emotional suffering and melancholia was attended with glycosuria, which, however, vanished as the melancholia passed off. In 10 per cent. of recent cases of melancholia glycosuria has been met with, while in mania it is said not to have occurred once. Dr. Blair has specially examined the urine of several epileptic lunatics but never once detected sugar. In no

case of insanity treated with thyroid extract could any sugar be detected in the urine, although the thyroid extract administered contained a small amount of lactose. No special treatment is needed for glycosuria in the insane except careful dieting and the practical exclusion of sugar and carbohydrates from the food.

NEW EDITIONS OF SCIENTIFIC WORKS.

IN another column will be found a letter from a correspondent under the above heading, suggesting that publishers when issuing a new edition of a scientific work should contemporaneously issue an appendix containing merely the alterations and additions to such work. Those, he says, who could afford to buy the complete edition would still do so, while those who possessed a former edition but could not afford the new one would buy the appendix. We are not so sure of the position as is our correspondent. The issue of an appendix would be a very good thing for the purchasers, but we have to consider not only the purchasers but also the publisher, to say nothing of the author, who, except in the case of a popular novelist, makes, as a rule, less out of the book which is the creation of his brains than anyone else. To print a book with alterations included in the body of the text and another book with those alterations printed separately, including all cross references such as, for instance, "Page 15, line 30, for 'to' read 'at,'" would necessarily entail two different settings of type and a proportionate increase in expense. On the whole, then, we do not think the plan feasible. While on the subject of new editions we should like to point out that it would be a great convenience if publishers would print upon the fly-leaf of any new edition the dates of the issues of former editions. One firm at least, Messrs. Macmillan, do this, and they deserve credit for so doing, but we should like to see the practice general.

THE FLUCTUATIONS IN OUR POPULATION.

AT a meeting of the Royal Statistical Society, held on Nov. 20th at the society's rooms, 9, Adelphi-terrace, Strand, W.C., a paper on the Distribution of Population in England and Wales, and its Progress in a Period of 90 Years from 1801 to 1891 was read by Mr. T. A. Welton, F.C.A. The writer commenced by depicting the position in 1801, when London contained not more than 922,000 inhabitants, and the next largest place (Manchester) about 91,432. There were 112 towns outside London with populations descending from that figure to 4000, and amounting in all to 1,400,762. The remaining towns distinguished in the tables ranging as low as 1000 inhabitants, contained 774,255 inhabitants, and there were populous industrial areas extending over 346,796 acres, and containing 227,593 inhabitants, besides which portions of the areas surrounding towns, but not actually parts thereof, were also populous. The bulk of the country was, however, thoroughly rural, over 34,000,000 acres being inhabited by 4,721,252 persons out of the total population of 8,892,536. At this date 36 per cent. of the people lived in towns of 1000 inhabitants and upwards, but in 1891 64 per cent. of the people lived in towns exceeding 4000 in population. The writer pointed out that there was a decline in rural populations since the year 1851, following a severe check to their increase in the period 1841 to 1851. This contrasted strikingly with a specially great increase of rural population in the years 1811 to 1821, the period marked by the cessation of the continental war. In sympathy with both phenomena, the less progressive towns greatly slackened in their increase during the 50 years 1841 to 1891, and showed a special tendency to increase in the years 1811 to 1821. As respects the more progressive places, there appears to have been latterly a slackening in the rates of increase of the older centres, say, towns which in 1801 had not less than 2000 inhabitants, but a fully sustained increase in the populations of those rising places which had not attained importance in 1801.

THE RELATION BETWEEN CARDIO-VASCULAR AND RENAL DISEASE.

THE *Philadelphia Medical Journal* of Oct. 27th contains a useful paper by Dr. A. O. J. Kelly on this intricate and at the same time practical question. In the advanced stage of granular kidney, when the nutrition of the heart begins to fail and the circulation becomes embarrassed, cardiac symptoms—cardiac asthma, œdema of the lungs, gastro-intestinal disturbances, oliguria, and anasarca—are most prominent and the pulse loses some of its high tension. To the cardiac hypertrophy dilatation supervenes and the right ventricle undergoes changes similar to those of the left. The mitral valve may become incompetent from dilatation and a murmur may arise. Thus primary heart disease is simulated. On the other hand, valvular disease may in its turn simulate renal disease. Owing to cardiac debility the murmur may be temporarily absent and albumin and casts may occur in the urine. Given, then, a patient with failure of cardiac compensation, hypertrophy and dilatation of the heart such that it is well-nigh impossible to determine which side is especially involved, and albumin and casts in the urine, with or without murmurs—is his affection primarily cardiac and secondarily renal, or *vice versâ*? The question is extremely difficult to settle off-hand. But in the majority of cases the diagnosis can be made by bearing in mind that in congestion of the kidney the casts are usually hyaline and that the amount of albuminuria varies with the state of cardiac activity, increasing and decreasing with impairment or improvement in the action of the heart. Again, if the urine remains albuminous despite the subsidence of signs of congestion of the liver, the spleen, and the serous cavities, if the specific gravity falls, and if in addition to hyaline a few granular casts and possibly some erythrocytes are found, there is evidently nephritis. The therapeutic test is of great importance. If the administration of digitalis which is urgently indicated produces marked improvement with disappearance of casts and albumin from the urine the condition is renal congestion, but if with cardiac improvement they do not disappear nephritis is present. This conclusion can be confirmed by examination of the cardio-vascular system now that compensation has been more or less restored. In the treatment of renal disease the cardio-vascular condition will need careful attention. In the stage of hypertrophy the well-known hygienic rules should be followed. Dr. Kelly advises the use of proteids in moderation. Some easily digested meat should be taken once a day. Eggs are very suitable. The only medicine required is an occasional saline purge to lower blood-pressure, but when cardiac failure begins medication is called for. Dr. Kelly strongly recommends nitro-glycerine in conjunction with caffeine—$\frac{1}{100}$th of a grain of the former in tablet or solution and three grains of the latter simultaneously three times a day. The nitro-glycerine not only lowers arterial tension but reduces the albuminuria, but it should be borne in mind that the pressure is not to be reduced to normal; some increased pressure is desirable. Caffeine acts as a gentle cardiac stimulant and as a diuretic. By means of this treatment Dr. Kelly has obtained good results. Dyspnœa, vertigo, and headache disappear, even in advanced cases. It is well to continue the treatment for from four to six weeks and then to interrupt it for a week or 10 days if the condition of the patient permits this. This treatment will also ward off an attack of uræmia (shown to be imminent by headache, vertigo, restlessness, foul breath,

coated tongue, and diarrhœa). When there is no decided cardiac debility Dr. Kelly believes that digitalis does more harm than good; it is indicated when marked cardiac dilatation and failure of compensation arise. It should be given in large doses and if good results be not obtained within four days strophanthus should be substituted. Strychnine is very efficacious, not only on account of its general effect, but also because of its action on the heart.

THE PARISH OF ST. GEORGE-THE-MARTYR, SOUTHWARK.

IN his annual report to the Vestry of St. George-the-Martyr, Southwark, Dr. F. J. Waldo, the medical officer of health, calls attention to the fact that during 1899 diarrhœa caused a greater mortality in the parish than any other zymotic disease, 102 deaths being attributed to this cause. Of this number 75 were under the age of one year, 21 were between one and five years, and six were at the age of five years and upwards. In addition to these 102 deaths from diarrhœa there were 39 deaths from gastro-enteritis. The predominance of mortality from diarrhœa over that due to other zymotic diseases was not peculiar to the year 1899, but was maintained throughout the eight years 1892 to 1899. Dr. Waldo has come to the conclusion that epidemic diarrhœa is due to the organic pollution of street-dust by horse-dung and the consequent contamination of food by this dust when blown about. In country districts, he says, road-dust is practically free from horse-dung and summer diarrhœa is hardly known. In the great majority of cases town children contract diarrhœa through the agency of milk, an obvious remedy for which state of things is to be found in the sterilisation of milk. Dr. Waldo also describes an interesting series of cases of typhus fever in which the disease was perpetuated at least from October, 1898, to February, 1899. The difficulties which arose in connexion with the former use of the crypt of St. George's parish church as a place of interment or deposit of bodies have now been overcome. By the end of 1899 upwards of 1400 bodies had been removed from the crypt and re-interred at Brookwood Cemetery, near Woking, the crypt being thereby cleared down to the floor level, which was afterwards cemented. As the parish of St. George-the-Martyr is now merged in the new borough of Southwark, the present report is the last one which Dr. Waldo will make to the vestry.

THE ESTABLISHMENT OF SANATORIA FOR PHTHISICAL PATIENTS.

THE scope of preventive medicine is widening day by day, and there are indications that in the near future diseases which are at present, in so far at least as practice is concerned, outside its limits will be brought within its sphere of active influence. For the moment attention is being turned prominently towards tuberculosis and the next 12 months are likely to witness some very material progress in this direction. In the annual report of almost every medical officer of health throughout the country the importance of this matter is accentuated, and although there is almost unanimous testimony against the compulsory notification of this disease there is an equally unanimous feeling that much may be done by proper preventive measures. County councils are, we are glad to see, taking a share in the work, and the county medical officer of health of Lancashire has recently issued a report upon the subject. In this report Mr. Edward Sergeant points out that during 1899 there were 2305 deaths from phthisis in Lancashire, and giving an average duration of three years to each case of phthisis he concludes that there may be some 6000 or 7000 phthisical persons living in the county, irrespectively, of course, of unrecognised cases. The extent to which these unrecognised cases may prevail is illustrated by the fact that of the adult bodies examined after death some 38 per cent., according to the investigations of Dr. Thomas Harris of Manchester, show signs of healed tuberculosis of the lungs. Mr. Sergeant also refers briefly to sanatoria in several parts of Europe and to the testimony of experience to the effect that by treatment in well-managed sanatoria from 25 to 50 per cent. of the patients can be cured or more or less benefited. From these premisses he deduces that if the phthisis mortality in Lancashire could be reduced even by 25 per cent. some 500 lives would be annually saved, and placing a pecuniary estimate of £159 upon each life, he shows that by this means alone about £75,000 per annum might be saved. In connexion with this question of sanatoria Mr. Sergeant refers to the law in force in Germany for effecting insurance against old age and sickness—a law which, he thinks, has not been without a material influence in bringing about the foundation of certain sanatoria, in the year 1898 from 3,000,000 to 4,000,000 marks being set aside by 33 societies towards the provision of such institutions. The key to the position may, indeed, perhaps be found in the fact that "half of the applications for sick pay between the ages of 20 and 29 among the insuring classes of Germany are because of tuberculosis." Finally, Mr. Sergeant raises the point, which we may consider subsequently in the columns of THE LANCET, as to whether sanitary authorities have power under the Public Health Act, 1875, to provide sanatoria, or whether the Isolation Hospitals Act, 1893, affords similar powers to county councils.

THE ADMINISTRATION OF THE OATH IN ENGLAND.

IT was to Mr. W. P. Sinclair of Liverpool, whose death was recently announced, that we are indebted for the fifth section of the Oaths Act, 1888 (51 & 52 Vict. cap. 46). The deceased gentleman represented Falkirk in the House of Commons, and when in 1888 the late Mr. Bradlaugh brought in an Act to amend the law as to oaths Mr. Sinclair obtained permission to introduce the now famous section. As a Scotchman and a Presbyterian he, with many others of his fellow-countrymen and co-religionists, was naturally annoyed at being asked, every time that he claimed to be sworn with uplifted hand, if that was the form of oath binding on his conscience. His attention had been called to the letters and articles published in THE LANCET during the year 1888 and previously and had he experienced any opposition to the fifth section he would have called the attention of his fellow-Members to the grave objections we had then urged against kissing the book, the mode of adjuration adopted in England and Wales and Ireland, but not in Scotland or in the Channel Islands where the uplifted right hand is the form. There was, however, no opposition, the section being passed as follows: "If any person to whom an oath is administered desires to swear with uplifted hand, in the form and manner in which an oath is usually administered in Scotland, he shall be permitted so to do, and the oath shall be administered to him in such form and manner without further question." This not only relieved Scotchmen and Presbyterians from being asked any questions, but, as will be seen, though this is not yet generally known, it relieved any and every person taking an oath or swearing to an affidavit under any circumstances whatever from kissing any book, whether Gospels or Pentateuch. It was a melancholy illustration of the proverbial uncertainty of the law that this Act, and especially this section, should have been, for years after it became law, unknown to lawyers themselves. Medical and other witnesses were illegally and rudely denied their lawful claim to be sworn as the Act permitted them by magistrates and by legal (not medical) coroners, and it required a circular

from Mr. Asquith, then Home Secretary, to bring these recalcitrant gentlemen to their senses and to their duties. As the House of Commons meets next week it seems fitting that the attention of its members, whose proceedings are considered to be a model for others to follow, should be called to the preferable mode of taking the oath. No doubt the grievance of kissing the book is little felt in the House of Commons, and especially in a new Parliament. The renovation of the legislative chamber comprises new wigs for the clerks at the table and probably it includes also an ample supply of new copies of the Gospels and of the Pentateuch. The Speaker, the first commoner in England, is the first to kiss probably an absolutely new book. The contrast between this and courts of law is manifest. Nevertheless, we would urge that the handling and kissing of a book in any assembly and under any circumstances is an uncleanly procedure. In a recent issue we felt it our duty to allude to the question of the communion cup as a possible means of infection. The danger of kissing the book in coroners', police, sessions, or assize courts is greatly accentuated by the fact that medical witnesses are asked to do this after the book has already been kissed by numberless witnesses of the lowest class, including from time to time some infected with loathsome diseases. This fact was recognised by Lord Justice Collins, who, when presiding at the Central Criminal Court, ordered a book to be destroyed after it had been kissed by a witness suffering from syphilis. We have frequently pointed out the dangers of the English mode of administration before and have urged the adoption of the Scotch form. We could add much in favour of the latter form on the grounds of greater impressiveness and more solemnity, but we must leave this to others.

FARQUHAR, NORTH, AND CO. v. LLOYD.

THE case of Farquhar, North, and Co. v. Lloyd, tried before Mr. Justice Wills, in which the plaintiffs obtained a verdict for £1900 damages against the *Daily Chronicle* for libel, illustrates somewhat forcibly the dangers which a newspaper may encounter if in the discharge of its duty to the public it reports legal proceedings and ventures in addition to comment upon them. The plaintiffs, being manufacturers of tinned provisions, had sold goods to a tradesman who had refused to pay for them, contending that they were defective and that had he sold them they would have proved dangerous to the public. He appears to have been successful upon these contentions on being sued in the county court for the price of the goods. The *Daily Chronicle* in dealing with the case must from the verdict of the jury be taken to have erred in its criticism, in that it suggested that the stock of the plaintiffs, beyond those articles sold to the retailer referred to, would be found in an equally defective and dangerous condition. This the *Daily Chronicle* presumably inferred, not only from the particular goods having been found to be unfit for consumption, but also from the attitude adopted by the plaintiffs in endeavouring to enforce payment for them by legal proceedings—a step which certainly lent colour to the suggestion that the goods were in their view fit for trade purposes, although they maintained that they would have exchanged the defective tins for sound ones had they been asked to do so. By what particular process the jury that tried the action for libel fixed upon £1900 as the sum due to the plaintiffs it is useless to inquire; they possibly thought that with the costs added the defendant newspaper would lose the round sum of £2000. Granting, however, that the article in question exceeded the limits of fair comment upon the proceedings in the county court, it appears to us that the damages were excessive. Damages so large could only have been awarded with justice where it was proved beyond doubt that damage approximating to the sum awarded was caused by the publication of the comments objected to, and not by the publication of the facts proved in the trial upon which comment was made, and which must have been reported in many newspapers besides the *Daily Chronicle*. The dangers arising to the poorer classes of the public from the sale of inefficiently preserved provisions are great and real. We ourselves frequently lay stress upon them, and it would be a matter of regret if the freedom of the press honestly to criticise and to censure were to be curtailed by the fear of a verdict for unreasonably large damages following the slightest error made in dispensing such censure and criticism. This is our view, and it is no answer to it to say that the proprietor makes a profit by the publication of the newspaper containing such criticism and censure and that he need not publish either the newspaper or the criticism unless he chooses. To deny that the newspaper proprietor or the newspaper writer has in any case a duty to the public, or that he ever aims at the fulfilment of that duty is to indulge in silly cynicism. Both have a duty, and if they go too far in performing it they must suffer. But it is to the public good that they should not be made to suffer unreasonably.

THE RULE OF THE PAVEMENT.

WEAK, nervous, and elderly people are often made very uncomfortable by the overcrowding of the London pavements in the more frequented parts, while busy men are driven to despair by the obstacles to direct walking. Of late the inconvenience experienced has been increased by the fact that the people of London are, on the whole, less orderly and well-mannered than those of a previous generation. The deterioration of public manners of the men, and especially of the boys, in the street is a subject of constant remark amongst those whose memory carries them back only 10 or 15 years. Formerly the observant Londoner on visiting a country town was often struck by the fact that in the provinces the people as a rule walked about without any regard to rule, and he noticed that although the pavements or "side-walks," to use a convenient Americanism, were less crowded there was much more trouble in avoiding collisions with foot-passengers than was the case at that time in any part of London. We regret to say that London is now as bad as, or worse than, any country town. The unwritten rule of the pavement—that a pedestrian should walk on the right side—is a most valuable one, and has not only convenience but some prestige of antiquity to support it. It does not, however, date back beyond the last century, and it is not, so far as we know, possible to determine the origin of the rule. It probably came slowly into general use in London. Dr. Johnson while at breakfast in the Highlands one morning told Boswell that when his mother lived in London there were two sets of people, "those who gave the wall and those who took it," and that when he returned from London to Lichfield his mother had asked him to which set he belonged. "Now it is fixed that every man keeps to the right," said Dr. Johnson, "or if one is taking the wall another yields it and it is never a dispute." This, according to Dr. Johnson, was the state of things in 1772. All well-behaved and peaceable people took the right side, but the rule was not absolutely established at that date, for some few people still "took the wall." Why it was a sign of pride and of a quarrelsome disposition to "take the wall" when to "go to the wall" was synonymous with misfortune is a question for philologists; we are concerned only to insist that in the present crowded state of the streets of London order and method should be duly observed by pedestrians. Even those who object to religious education ought if they be good citizens to discourage rowdyism, and the hustling on the pavements of

some of the crowded streets of the metropolis is hardly to be differentiated from rowdyism. The rule of the pavement should be taught in the board schools and it would be by no means a bad test question to put to all candidates for the London School Board to ask them whether they are or are not in favour of such teaching.

SIR ARTHUR SULLIVAN.

MUSIC, in so far at any rate as it conduces to happiness, is a great therapeutic agent, so we make no apology for referring in these columns to the loss which British music has sustained by the death of Sir Arthur Sullivan. In serious music he sometimes rose to great heights, as witness the fine chorus in *The Golden Legend*, commencing "The night is calm and cloudless." But where he shone pre-eminent was in his faculty for writing really humorous music. Take for examples the delicious burlesque solemnity of the entry of the judge and the fugal chorus of jurymen, "He'll tell us how he came to be a judge," in *Trial by Jury*; the introduction of the opening notes of the great G minor fugue given to the bassoon in the Mikado's song concerning punishment; and Arac's Handelian *aria di bravura* about his armour in *Princess Ida*. Sullivan's orchestration was always fitting and appropriate, and although *Ivanhoe* was not a success yet it contained at least one gem, the song "O moon, thou art clad in silver," with its delicate accompaniment given to flutes and muted strings. He was many-sided: he could write a song (notably, "Orpheus with his lute"), he could write a madrigal, or, to be more accurate, we should say a ballet or Fa-La, he was unrivalled at a patter song, and the music to "When the night wind howls," in *Ruddygore*, was a *danse Maccabre* which made the hearer shudder. By his art he lightened many weary hours, and though his works live after him it is sad to think that the hand which wrote and the brain which conceived them are stilled.

THE DENTAL HOSPITAL OF LONDON.

THE subject uppermost in the minds of those who attended the annual dinner of the staff and past and present students of the Dental Hospital of London, which was held on Nov. 24th at the Hôtel Métropole, was the approaching completion of the new hospital in Leicester-square. The information afforded on this head by a trustee and vice-president of the hospital, Mr. F. A. Bevan, was very encouraging. He had recently visited the premises and could assure the present students that in a few months they would be able to conduct their studies in a building worthy of the best traditions of the institution. The benefits which this charity has conferred on a needy public may be best realised from the statement made by Mr. F. G. Hallett that during the past year over 68,000 cases had been treated at the hospital at a cost of less than £3000. Further proof of the need of increasing the accommodation of the hospital and the school was afforded by the fact that the numbers of students entering for the hospital curriculum continued to increase. Last term a larger number of students had joined the school than had ever joined before. How the work was carried to the successful issue which the past history of the hospital had shown in the old utterly inadequate building was a matter of surprise to all concerned. Mr. C. S. Tomes, F.R.S., urged the students and all those present who were interested in the well-being of the institution and the success of the school not to relax their energies towards increasing the fund for the new premises so that there might be no feeling of anxiety as regards the financial situation. It was a gratifying feature of the subscription list that old students had rallied round their *alma mater* by giving substantially to this fund. It was abundant proof that they appreciated the educational value of the hospital. More money, however, was needed. The dinner was well attended, amongst those present being many representatives of the various London medical schools.

THE Queen has given to Sir William Mac Cormac, Bart., K.C.V.O., President of the Royal College of Surgeons of England, Her Majesty's Royal licence and authority to accept and to wear the Cross of Commander of the Legion of Honour, conferred upon him by the President of the French Republic in recognition of services which he rendered to the French wounded during the war of 1870–71, as well as to the International Medicine Congress held during the recent Paris Exhibition. Sir William Mac Cormac is to be congratulated on this most recent addition to his many honours, and doubtless this recognition of his services by the French Republic will be highly appreciated by him.

PROFESSOR W. H. CORFIELD'S Harveian Lectures on "Disease and Defective House Sanitation," of which translations into French and Hungarian have already been published by the Royal Society of Public Health of Belgium and the Hungarian Society of Public Health respectively, have now been translated into Italian by Dr. Soffiantini of Milan, and are being published, with the illustrations, in *Il Monitore Tecnico*.

THE first annual dinner of the Otological Society of the United Kingdom will take place on Monday, Dec. 3rd, at 7.30 o'clock, at the Café Monico, Sir William B. Dalby, the President, in the chair. Amongst the guests expected are Sir Thomas Smith, Sir R. Douglas Powell, Sir Felix Semon, Mr. T. Pridgin Teale, Dr. F. W. Pavy, Dr. T. Barlow, Mr. T. Bryant, Mr. W. Watson Cheyne, and Mr. H. T. Butlin.

To mark their esteem and personal appreciation of the late Mr. Thomas Cooke, F.R.C.S. Eng., some of his friends and past pupils recently presented to Mrs. Cooke a portrait of her late husband, together with a piece of plate. Dr. Dundas Grant was chairman of the committee, Dr. David Walsh acted as honorary treasurer, and Mr. Wyatt Wingrave was honorary secretary.

MR. HERBERT F. WATERHOUSE, F.R.C.S. Eng., has been appointed Dean to the Charing Cross Hospital Medical School, *vice* Dr. Montague Murray, whose term of office has expired.

DURING the week ending Nov. 22nd there were 39 fresh cases of plague in Mauritius and 25 fatal cases, making the total of deaths from plague 33.

H.R.H. the Princess Louise, Duchess of Argyll, has joined the committee of the Coal Smoke Abatement Society.

MEDICAL WOMEN IN HUNGARY.—A woman has for the first time been allowed to take a medical diploma in Hungary.

UNIVERSITY COLLEGE, BRISTOL.—The annual meeting of the governors of this college was held on Nov. 21st under the presidency of the Bishop of Hereford. The report, which showed a satisfactory year's work, stated that 542 students had attended the classes during the year and added that the council viewed with much satisfaction the amalgamation of the Bristol Royal Infirmary and the Bristol General Hospital for the purposes of clinical instruction.—The new wing of the college, comprising a large hall, a library, a laboratory, and class-rooms, was opened at the end of September. The total cost of the building was £7500, towards which £6000 have been subscribed.—The University Entrance Scholarship of the value of £50 open to medical students has been awarded to Mr. Samuel C. Hayman.

ARSENICAL POISONING FROM BEER-DRINKING.

Notes by T. N. KELYNACK, M.D. VICT., M.R.C.P. LOND.,
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Analytical Report by WILLIAM KIRKBY, F.L.S.,
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Notes by PROFESSOR SHERIDAN DELÉPINE,
PROFESSOR OF PATHOLOGY IN VICTORIA UNIVERSITY (OWENS COLLEGE);

AND C. H. TATTERSALL, L.R.C.P. LOND., M.R.C.S. ENG.,
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FOR some time past the number of cases of "peripheral neuritis" in Manchester and Salford has been rapidly increasing, and recently they have reached "epidemic" proportions. This at first was not unnaturally thought by some to be due merely to increased drinking associated with the recent elections and rejoicings in connexion with the war. But soon it was found that not only were the cases extremely numerous but that they presented features unusual in so-called "alcoholic peripheral neuritis." Large numbers came under observation in the various union infirmaries and flooded the out-patient departments of the hospitals. For some time past I have been seeing many amongst the very poor people attending the out-patient department of the Salford Royal Hospital at Pendleton. Some few have also been under observation in the wards of the Manchester Royal Infirmary. The patients are generally "beer"-drinkers, although some admit partaking of spirits in addition. Both men and women are affected, the latter often suffering severely. I have seen no distinct cases in children, although large numbers of poor children have been attending our out-patient department at Pendleton.

Complaint.—In most instances the patients have sought assistance on account of the weakness and pains in the limbs. They describe their sensations as like "pins and needles," "numbness," "pricking," "like walking on hot bricks," or "scalding." Some complain chiefly of their difficulty in walking. In more advanced cases they declare themselves as "paralysed" and are quite unable to get about. In some few cases the pains are more general. One woman came complaining that she and her mother had "rheumatism all over." Many seek advice on account of the "rashes" and "itching" of the body, but generally the poorer patients affected have not been particularly observant of the pigmentation. In some persons, however, the increasing darkening of the skin has been the chief feature to attract notice. Not a few complain of "smarting of the eyes," "a cold in the head," "running of the eyes and nose," or even "influenza." One woman complained bitterly that her eyes were always "running and scalded her cheeks." Many have "gone hoarse." In some few cases a history of nausea and vomiting has been given. Not a few say that their hands and feet are getting thick "and the skin crumbling." Numerous cases have presented herpetic and other skin eruptions.

General aspect.—This in a well-marked case is very characteristic. Frequently, but by no means always, the appearance is "alcoholic." The face is usually dusky, the eyes watery, and often with tears visibly overflowing. Sometimes there is distinct puffiness about the eyelids. Walking is usually difficult and the patients progress in a gingerly or ataxic manner. In bad cases there is much general wasting. The temperature in severe cases may be raised. In an affected district one can readily recognise the subjects of this remarkable malady from their tearful expression as they stand at their doors or shuffle about the house and loiter at street-corners.

Cutaneous system.—In almost every case the skin is more orless involved. 1. Pigmentation is the most conspicuous feature. This may be general. It varies greatly in intensity in different parts of the body. As in Addison's disease, it is frequently most marked on exposed parts, over pressure areas, and in the normally pigmented situations. In tint it often resembles a "vagabond pigmentation," and has, I believe, not infrequently been put down to "dirt." One of the sisters in the infirmary tells me that one patient on admission was washed three times without visible improvement. Many of the female patients have been much disconcerted at their growing duskiness. The pigmentation varies from a mere "browning," as from exposure to sun, to an almost dull black in pigmented regions, like the areola. In many the distribution is irregular. The face is often comparatively slightly involved. I have, however, seen very dark pigmentation of the eyelids. The neck is often very brown. The pigmentation is usually best marked in the axillæ, groins, areola, and abdominal wall. It is frequently intense around the umbilicus. Scars and old cicatrices are usually non-pigmented. The appearance of the skin is often curious; numerous very small round islands of skin but little pigmented may be seen in the midst of the deeply-pigmented areas, giving the body a "spotted" appearance. It is well, however, to point out that in many of the very marked "neuritic" cases the pigmentation is so slight as to be readily overlooked. 2. Herpes has been met with in a large number of cases. Dr. R. Forsyth and Dr. Hitchon, medical officer of health for Heywood, tell me that they have had quite an "epidemic" of herpes in their practice. 3. Erythematous eruptions have been present in a large number of the cases. 4. A papular eruption has also been common and usually associated with much itching and discomfort. 5. In many a "branny" desquamation can be observed. The shed epithelium may be pigmented. I have seen it so plentiful as to give rise to a conspicuous deposit on the bed-sheet. One woman I saw at Heywood with Dr. Hitchon complained to me of the "crumbling away" of dirty skin from her chest. The same patient said that her hands were so hard and cracked that she found it impossible to keep them clean. 6. The cuticle becomes thickened, especially in the hands and feet. Many have particularly complained to me of this. Some have found that their hands get so "thick" that they cannot well close them. The thickening is generally most marked over the heels and balls of the toes, but the hands are also frequently much affected, especially over the thenar and hypothenar eminences and around the knuckles. In some cases the thickening of the hands may be general. Patients have spoken to me of the way in which they have detached the thickened skin from their feet. When they continued to walk about I have observed distinct "blisters" in the areas of keratosis. 7. The nails become hard, thick, and brittle, and one man tells me the nail "came off by itself." Some patients have remarked that the nails grow with unaccustomed rapidity and the cutting of them is very difficult. I have not observed any very marked change in the hair. 8. Boils have been met with in such situations as the vulva.

Nervous system.—Sensory symptoms of almost every degree are marked in practically every case. These vary, ranging from slight numbness to the most intense pain. Patients often dread to be touched and sometimes cannot bear even a sheet to rest on the feet. Cramps may be severe. Curiously enough, the chief sensory disturbances are generally limited to the extremities well below the knees and elbows. In not a few cases I have found the patients limiting the area of pain and discomfort to the hands and feet. Sometimes a slight movement of the leg or jar to the bedstead will make the patient cry out in anguish, the pain shooting upwards along the nerve-trunk, and, from the description given by the sufferer, seeming to resemble closely the shooting pains in "locomotor ataxia." In some cases the patient has been thought to be suffering from "sciatica." Occasionally the pain and anguish may be intense. When visiting some of the cases with the medical officer of health of Heywood I found one poor woman in such agony that her medical attendant had been obliged to administer morphia. I have seen many cases in which the area of the pain and character and distribution of the erythema in the feet closely resembled the affection termed "erythromelalgia." In many the border of the erythematous portions has been more or less clearly defined and usually running along the borders of the feet. Sweating has often been well marked, but is by no means constant. The degree of motor involvement varies greatly. Some patients insist on moving about, although often with a shuffling, unsteady gait. They readily get tired and stop to rest, leaning for support on anything convenient. When sitting down many reach their chair with a "flop," and in rising are obliged to assist themselves with their hands. Tremors are often present and are evidently not always-

due to the alcohol. The ocular muscles are apparently not affected, and so far I have not met with any distinct case of paralysis of the intercostal muscles and diaphragm. Manifestations of trophic disturbance are present in all cases. The reflexes vary considerably. The superficial reflexes are often exaggerated even in long-standing cases. The "knee-jerk" is diminished or abolished in the greater number of cases, but I have met with it distinctly increased in severe cases. Hitherto I have not been able to take the electric reactions. Although mental derangement has been met with in many cases these have generally been in the excessive drinkers and it has been more or less of the usual "alcoholic" character, and in some of the cases cerebral disturbance has been apparent.

Respiratory system.—The mucous membrane of the respiratory passages is much congested in many cases. If the nose is not found "running" usually moisture from serous discharge will be seen immediately within the nostrils. The "catarrh" often involves the larynx, and very many of my patients have complained of "huskiness" and alteration in their voice. In some few it has been so marked that the patients could only phonate with difficulty. The lungs apparently do not suffer directly, at least to any extent, but I believe it will be found that some deaths have occurred from respiratory failure due to paralysis of the diaphragm.

Circulatory system.—Some of the beer-drinkers present the usual evidence of cardiac enlargement and muscle failure, but in the cases arising in strictly moderate indulgers there seems to have been no direct action on the circulatory apparatus. It is important to bear in mind, however, that the irritant may be capable of setting up "neuritis" of the vagus.

Digestive system.—The tongue is often "furred" and in some instances presents an appearance best described as "silvery." The mucous membrane of the mouth is not pigmented. In mild cases the appetite may be fairly good. I have not met with true ulceration of the gums or fauces. There may be slight catarrh of the pharynx. Salivation has not been marked in the cases I have seen. Nausea and sickness are present in not a few, but I have been surprised to find that many severe cases have never had any vomiting. Diarrhœa is exceptional; many cases are constipated. Colic is practically never complained of, but some have experienced epigastric pain and slight general abdominal discomfort.

Urinary system.—This presents but little evidence of derangement. One man complained of some "smarting" during micturition, and some have said that they passed urine more frequently. In severe cases the urine may be high-coloured. Generally no important alteration in the urinary secretion has been noticed. We hope to be in a position at a later date to give the results of our investigations regarding the urine.

Clinical varieties.—From a study of the clinical cases it is easy to distinguish two chief groups: (1) those which were manifestly "alcoholic," and (2) those which both from a consideration of their history and from their general appearance were manifestly not excessive indulgers in alcoholic drinks. Not a few of the cases, I am convinced, belong to this group. Among the sufferers in the Heywood outbreak I saw several. One was a young woman who had taken "stout" for many years, about a pint daily. There were no reasons to believe that she was in any way to be considered intemperate. She had certainly been "affected" for six months by the prevailing malady, although not in a severe form. In a later communication I hope to deal with the special clinical types.

Nature of the poison.—For long these cases have been looked upon as simply "alcoholic multiple neuritis." Later it became manifest that it was of an altogether exceptional type, and then it was realised that this was almost certainly due to some special irritant or irritants in the liquors taken. Finally, Dr. E. S. Reynolds, assistant physician to the Manchester Royal Infirmary and visiting physician to the Manchester Union Hospital, made the startling discovery that arsenic existed in the beer. This fact was announced to the profession at the meeting of the Manchester Medical Society on Nov. 21st, and the public first learnt of it from the newspapers of Nov. 23rd.

Duration of the malady.—It is very difficult at present to ascertain how long this arsenical poisoning has been going on. Probably for very many months. Certainly it has existed in this district in "epidemic" form for at least two months. Many of my Salford cases date their symptoms back for about nine or ten weeks. On Nov. 12th I saw in consultation with Dr. J. W. Crawshaw of Weaste a very marked case where the patient, an intelligent woman, aged 39 years, dated the commencement of her pigmentation, which was intense when I saw her, to June, which time she was able to locate exactly, as she was at the Isle of Man from June 1st to 9th, and observed the brown discolouration starting on the left side of her neck a week after her return. Dr. Crawshaw writes to me to the effect that "for some time before she went away she had noticed a troublesome watery discharge from the eyes and nose." We may therefore, I think, conclude that this form of poisoning has been going on for at least six months. It was remarkable that the cases generally occurred in "beer"-drinkers. In Heywood, however, consumers of "stout" have also been affected. The poorer classes have been the chief sufferers. Generally they have owned to taking "fourpenny beer," but some have taken "sixpenny" and others "bottled beer." Salford has suffered severely, while some districts of Manchester, so far as I can at present ascertain, have been hardly affected. But the cases are by no means limited to Manchester and Salford. Those I have seen in Liverpool, Heywood, and Warrington are similar to those in Manchester and immediate district. Our researches go to show that many of the important large towns in the district are affected, and even the villages would seem not to have escaped. This fact has made us most desirous of placing the results of our investigations before the profession, so that steps may be immediately taken throughout the country to insure that the painful experience of Manchester may not be repeated elsewhere.

Localising the source of the arsenic.—Directly the cause of the poisoning became apparent I immediately sought the coöperation of Mr. Kirkby, of the Pharmaceutical Department of The Owens College, and Dr. R. Forsyth, medical officer to one of the largest firms of brewers in Salford. We have the satisfaction of knowing that as the result of our labours the source of the introduction of the arsenic into the "beers" was localised within a few hours of the announcement of the nature of the poison to the public, and early on Nov. 23rd we informed the medical authorities of Manchester and Salford and the brewers themselves of our discovery, and also Dr. Dreschfeld, senior physician to the Manchester Royal Infirmary. Dr. Forsyth has rendered us invaluable help and the brewers have afforded every facility for the investigation of all the materials used by them in the making of the affected "beer." We have also received much assistance from Dr. Harold Bailey who has obtained samples of the "beer" taken by many of the affected patients.

Treatment.—A word or two of caution and suggestion may be added in regard to the treatment of the sufferers. Now that the nature and source of the irritant has been ascertained it may be hoped that all necessary steps will be taken to arrest the "malady." Affected cases will, however, for some time to come call for careful management. In every case it will, of course, be found necessary absolutely to forbid the use of all drinks which may be suspected to contain arsenic. I also believe it will be found best to withhold every form of "spirit." Rest must at once be enforced and severe cases sent to bed. I know from what I have myself seen that many are now aggravating their sufferings and lengthening their illness by neglecting to insure rest for the affected tissues. Immediate steps should be taken to provide for the poor sufferers an adequate number of nurses in towns where these cases have occurred, and especially in those places where unfortunately no hospital is at present available. For many of the cases it will be desirable to arrange for a long course of massage. A recently published treatise on medical treatment states that for "alcoholic neuritis preparations of arsenic are sometimes valuable." It is to be hoped that this suggestion is not being acted upon with regard to any of the cases now under consideration. Realising the far-reaching importance of the subject we have felt it to be our duty to the profession and to the public to publish our results at the earliest possible moment, but we hope to be able to deal with certain further matters of much scientific and medico-legal importance in a subsequent communication.

REPORT ON BEERS AND BREWING SUGARS IMPLICATED IN THE OUTBREAK OF ARSENICAL POISONING IN MANCHESTER AND SALFORD.

With a view to elucidate the mystery concerning the epidemic of arsenical poisoning in Manchester and Salford Dr. T. N. Kelynack obtained for me samples of beer which was

habitually drunk by five patients under observation, the said samples being bought by the patients themselves or by their relatives under the direction of a medical man. There was no difficulty in detecting arsenic in these samples. Through the kindness of Dr. Forsyth and of one of the largest and most influential brewers in the district Dr. Kelynack obtained three samples of beer bottled in August, October, and November. In these also arsenic was found in varying proportions. Having ascertained (*a*) that the people under treatment were drinking beer contaminated with arsenic, and (*b*) that the beer was actually leaving the brewery with the arsenic in it, it was clear that all possible sources of contamination between the brewery and the consumer could be safely ignored. A brief review of the known constituents of this beverage indicated that the most probable source of the poison would be found in some article in the production of which sulphuric acid is used, as this frequently contains arsenic as an impurity. I accordingly asked for, and was most courteously supplied with, samples of calcium sulphate (used for water hardening) and "invert sugar." The first of these was quite pure, but the second was charged with considerable quantities of arsenic. Immediately upon ascertaining this (the morning of Friday, Nov. 23rd) Dr. Kelynack was informed and he at once communicated the intelligence to the medical officers of health for Manchester and Salford and to the brewers concerned.

Immediately upon the fact becoming known another very prominent firm of brewers came to my assistance, and with the combined help of them, Dr. Forsyth, Dr. Harold Bailey, Dr. Crawshaw, and others Dr. Kelynack and I are now able to publish the subjoined lists of figures which at present require no comment from a chemical point of view. It should, of course, be distinctly understood that in determining such minute quantities of arsenic the figures can at the best be approximations to the truth. Every figure, however, is the outcome of at least three experiments and in many cases of six experimentt. The quantities are given in terms of arsenious acid (As_4O_6) because the dose of this is probably the most familiar to practitioners.

Beers, &c.

1	Beer	From patient	0·14	grain per gallon.
2	"	"	0·14	" "
3	"	"	0·07	" "
4	"	"	0·07	" "
5	"	"	0·02	" "
6	Porter	"	0·08	" "
7	Beer	From brewery	0·28	" "
8	"	"	0·18	" "
9	"	"	Faintest trace.	
10	"	"	0·01	grain per gallon.
11	"	"	0·04	" "
12	"	"	0·09	" "
13	"	"	0·09	" "
14	"	"	0·14	" "
15	"	"	0·14	" "
16	"	"	0·10	" "
17	"	"	0·20	" "

The above beers, &c., were examined because they were suspected. Now, however, we are turning our attention to the beers which are being sold from day to day, and concerning these we shall report in the near future.

Brewing Sugars.

1. Invert sugar ... 3 parts in 10,000 parts.	4. Glucose ..... 4 parts in 10,000 parts.
2. Invert sugar ... 3 parts in 10,000 parts.	5. Glucose ..... Faintest trace.
3. Invert sugar ... *Nil.*	6. Glucose ..... Faintest trace.

I have the best reason for believing that Nos. 1, 2, and 4 have a common origin.

That arsenical impurity should result from the employment of sulphuric acid in the manufacture of these sugars is not greatly to be wondered at when it is remembered that the greater proportion of the acid is obtained from iron pyrites. But the recurrence of such a sad state of things as now exists in this district must be obviated in the future by the establishment of a test for arsenic to which all sulphuric acid that is to be used for the manufacture of food and drinks must conform, just as in the case of that which is used in medicine.

I must tender my thanks to Mr. Roy for his assistance, and to Messrs. Jewsbury and Brown for the use of their laboratories and for other facilities afforded me in prosecuting these investigations.

WILLIAM KIRKBY, F.I.S.,
Pharmaceutical Chemist; Lecturer in Pharmacognosy in the Owens College.

Manchester, Nov. 27th, 1900.

NOTES ON RECENT BEER POISONING IN SALFORD, WITH A TABLE OF ANALYSES.

On Nov. 9th Mr. R. D. Cran, the Poor-law medical officer of the Regent District of Salford, reported a large amount of illness of a paralytic nature in his practice which he had concluded was due to beer-drinking. On that day five samples of beer were obtained and forwarded to the public analyst and a further ten samples a few days later. He, however, failed to find anything to account for the illness. It had been noticed for some time that deaths from "peripheral neuritis," "multiple neuritis," and "alcoholic neuritis" were more numerous than usual and inquiries had been made among a few friends who had not noticed any excess in illness of this character in their practice.

The increase in deaths from this cause commenced in the third week in July, from which time to the present the weekly figures have been: 3, 0, 1, 1, 1, 2, 2, 1, 2, 4, 2, 1, 2, 3, 3, 4, 5, 2, and 2, making a total of 41. In addition, during the same period there were 25 deaths certified to be due to "alcoholism," or a total of 66 in the past four months, as compared with 22 in the first seven months of the year, 39 in 1899, 31 in 1898, and 27 in 1897.

Immediately following Mr. Cran's notification an inquiry was commenced into the circumstances of all the cases that could be heard of, and it was soon abundantly clear that the one thing common to all was beer-drinking—not necessarily to excess—and it was further ascertained that the cases were not confined to the drinkers of beer from one particular brewery.

On Nov. 16th we consulted together and concluded that the only probable causes of the peculiar sickness were: (*a*) metallic poisoning (lead or arsenic); (*b*) poisoning by higher alcohols accidentally present in the beer; and (*c*) poisoning by some unknown bacterial product. Samples of beer were obtained on Nov. 19th from a shop to which one case of illness could be clearly traced for purposes of experimental investigation.

On Nov. 20th we heard that Dr. E. S. Reynolds had found arsenic in a sample of beer and that his observation had been confirmed by Professor J. Dixon Mann, and we had no difficulty in satisfying ourselves of the presence of arsenic in our samples. Specimens of every article used in the brewery concerned were obtained and examined, arsenic being found in one sample of glucose (out of three) and in a sample of inverted sugar on Nov. 22nd. It was ascertained that both these substances were purchased from the same firm of sugar manufacturers. Their works were visited on the 23rd and samples of everything used were examined, and it was found that the only sulphuric acid used was loaded with arsenic. The sulphuric works were visited on the 24th and it was ascertained that the sulphuric acid was the ordinary commercial sulphuric acid prepared from arsenical pyrites. In all 62 samples of various kinds were examined for the presence of arsenic; the portions of these analyses are given in the accompanying table. The results show that there is no arsenic present in any substance which cannot be traced to the use of this impure sulphuric acid by this particular firm.[1]

Professor Harold Dixon, F.R.S., of the Owens College, has made an examination of the sulphuric acid, glucose, and beer, and he reports as follows: "The sulphuric acid was found to be highly contaminated with arsenic. I can say with certainty that it contains more than 1·4 per cent. by weight of arsenious acid. The glucose contains a very considerable quantity of arsenic. Owing to the limited time at

[1] Although immediately after hearing of the discovery of arsenic by Dr. Reynolds we suspected for obvious reasons brewers' sugar as the source of arsenic we thought it necessary to continue our investigation of all the ingredients entering into the composition of beer. We had not only to prove the presence of arsenic in sugar, but also to prove its absence in all the other articles. In addition to this we took steps to ascertain the exact amount of arsenic present in certain samples of beer and in the corresponding samples of glucose and sulphuric acid, in order to satisfy ourselves that there was enough arsenic in the sulphuric acid to account for the whole mischief. In Mr. Wynter Blyth's book on "Foods, their Composition and Analysis," fourth edition, p. 542, the results of analyses of arsenical glucose by Ritter, and by Clonet ("Annales d'Hygiène Publique," xlix, January, 1878) will be found. Our results do not agree with those of Ritter, for we found a large amount of arsenic in some of the whitest glucose.

my disposal I am not prepared to speak with the same certainty as to the exact percentage of arsenic present, but there is strong evidence that this glucose contains fully 0·5 per cent. by weight of arsenious acid. The quantity of arsenic in the beer is small and it would require a considerable time to make a quantitative analysis; about the presence of arsenic in appreciable quantity there can be no doubt."

Table of Analyses.

No.	Material.	Arsenic.	No.	Material.	Arsenic.
	Firm A.			*Firm D.*	
α	Beer.	+	2	Hops.	–
β	,,	+	3	,,	–
γ	,,	+	24	Glucose.	–
8	Hops.	–	25	Inverted sugar.	–
9	,,	–			
10	,,	–		*Firm E.*	
11	,,	–	4	Hops.	–
12	,,	–	5	—	–
21	Glucose.	–	6	—	–
22	,,	–	7	—	–
23	,,	+	40	Inverted sugar.	+
24	Inverted sugar.	+	41	,,	–
28	Malt.	–			
29	,,	–		*Various other beers.*	
30	,,	–	I.	—	–
31	,,	–	II.	—	–
32	,,	–	III.	—	–
33	,,	–			
34	,,	–		*Firm F., Brewers' sugar manufacturers from whom sugars used by Firm A and E are obtained.*	
36	Preservative.	–			
35	Gypsum.	–			
27	Water.	–	44	Glucose.	+
	Firm B.		45	—	+
13	Hops.	–	46	—	+
14	,,	–	47	—	+
15	,,	–	48	—	+
16	,,	–	49	—	+
17	,,	–	50	Inverted sugar.	+
18	,,	–	51	,,	+
19	,,	–	42	Sulphuric acid.	+++
20	,,	–	43	Sulphurous acid.	–
38	Glucose.	–	56	Whiting.	–
39	,,	–	52	Maize meal.	–
	Firm C.		53	Sago flour.	–
1	Hops.	–	54	Tapioca flour.	–
37	Glucose.	–	55	Cane sugar.	–

From these results it is evident that arsenic is contained in the beer in sufficient quantities to account for chronic arsenical poisoning. The symptoms of the cases inquired into are also quite consistent with this view—viz., running of the eyes and the nose, pigmentation of the skin, various rashes, including peeling of the hands and feet, paralysis, analgesia, myalgia, pins and needles in the hands and feet, and diarrhœa (in one case). Other cases have been heard of where the individual has suffered from vomiting and diarrhœa and has at once ceased drinking the offending beer, no further symptoms occurring. Further, every case we have followed up (about 100) can be traced to beer in the brewing of which glucose or sugar from one manufactory were used. As this firm supply about 200 breweries, to a greater or less extent, in the North of England and the Midlands, it is not surprising to find that similar cases of illness are occurring in other districts.

It is due to the sugar manufacturers to say that we understand they have issued a circular to their customers advising them of the facts and requesting them not to use any of the materials already supplied. Our thanks are due to the brewers for the facilities which they have given for the prosecution of our inquiry, and there cannot be the slightest doubt that they are entirely innocent of any negligence.

We cannot conclude without referring to the very great assistance which we have received from Dr. Coutts, F.I.C., who has carried out the great bulk of the analyses. In conclusion, we think we have proved the correctness of Dr. Reynolds's opinion that this outbreak of disease is due to arsenical poisoning from beer-drinking; that the presence of arsenic in the beer is due to the use of contaminated glucose and inverted sugar by the brewers; and that this contamination of sugar is caused by the use of very impure sulphur acid by the sugar manufacturer prepared from arsenical pyrites. It seems to us very necessary that the use of sulphuric acid in the preparation of articles for consumption should be placed under strict supervision.

SHERIDAN DELÉPINE.
Salford, Nov. 27th, 1900. C. H. TATTERSALL.

*** We have received photographs of the octahedral crystals of arsenious acid obtained from 40 cubic centimetres of the specimen of beer marked γ in the table, and from three grammes of the specimen of glucose marked 44.—ED. L.

THE NEW PROPHYLAXIS AGAINST MALARIA: AN ACCOUNT OF EXPERIMENTS IN LATIUM.

BY PROFESSOR ANGELO CELLI.

(*Specially translated for* THE LANCET *from the Supplemento al Policlinico, Anno VI., N. 51.*)

THE modern theory of the propagation of malaria by means of mosquitoes had scarcely been confirmed experimentally when, in my lectures in May and June of 1899 and shortly afterwards in book form,[1] I gave an exposition of the new epidemiology and the prophylaxis following from it. This, I pointed out, in order to be completely successful must be directed against (1) the causes bringing about infection, either by (*a*) destroying these (by disinfection of the blood of malarious persons and by the destruction of mosquitoes) or (*b*) by preventing their entrance into the human organism (by protection of dwelling-houses and of the exposed parts of the body); and (2) against the predisposing causes (organic, physical, and social). In view of the arduous nature of any attempt to battle against the latter set of causes I endeavoured (even before the commencement of the malarial season of 1899) to put into practice those only of the prophylactic measures which have for their aim the suppression of the direct causes of the epidemic, that is to say, the causes bringing about infection. I was even then persuaded, and am now more than ever convinced, that a complete and certain prophylaxis by disinfection of the blood by means of quinine is practically impossible, although Koch, and later Gosio, and at first Grassi also, believed in its efficacy. And I had likewise come to the conclusion, through my own and Casagrandi's researches,[2] that although the destruction of the mosquito in the aquatic and the aerial stages of its existence is in itself not a difficult thing, this is not practicable on a large scale, chiefly because there is not the same immediate material advantage in killing insects which are injurious to man that there is in destroying those which are injurious, for example, to the grape-vine.

My first prophylactic experiments of 1899 had consequently for their object the testing of the means best adapted to prevent the bites of mosquitoes and the resulting penetration of the malarial germ into our bodies. On one hand I made experiments with various substances, such as ointments, soaps, and odours, calculated to drive away mosquitoes, and satisfied myself that they were of little use, even the best of them, as, for instance, those with turpentine for their basis, either because of their ephemeral effect, especially in the open air, or because of the negligence of those employing them. On the other hand, I adopted the method of mechanical protection of the houses and of the exposed parts of the body, not omitting at the same time the disinfection of the blood by an assiduous attention both to relapses and to primary fevers, and the destruction of any

[1] Malaria According to the New Researches (Longmans, Green, and Co.)
[2] Per la Distruzione delle Zanzare, Mem. I., Annali d'Igiene Sperimentale, vol. ix., 1899.

mosquitoes which might accidentally penetrate into the houses. It will be well to refer here once more to the experiment which I made in the æstivo-autumnal season of 1899 on the two railway lines, notoriously malarious, of Prenestina-Cervara and of Pontegalera. I shall therefore give a brief *résumé* of the official report dated Dec. 13th of last year.[3] On the first-mentioned of these two lines we selected for experiment the linemen's cottages numbered 4, 5, 6, 7, and 8, and on the second those numbered 19, 20, and 21. We covered the windows with frames of tulle,[4] thus allowing air and light, but no mosquitoes to pass. At the top of the staircase a door with a similar frame was placed the better to protect the bedrooms. This door, as well as the outer ones, was made to close automatically so as not to demand too much of human apathy. The entrance door, as being more liable to injury, was furnished with wire gauze instead of muslin. We advised the inmates to sleep with the windows open so that the air, filtered as it were from insects, might pass in freely. For the protection of persons employed on night duty we used cowls like those of bee-keepers, provided with a circular mask of wire gauze and having attached to it below a veil tucked under the coat, at the ends of the sleeves of which very wide gloves of chamois skin were tightly sewn on. A vigilant outlook was daily kept for mosquitoes in order to find and eventually to capture them in the houses. Every family was provided with a powder for burning in case by any chance a mosquito should make its way in. The neighbouring linemen's cottages and the stations of Cervara and Pontegalera served as controls. On the Prenestina-Cervara line Cottage No. 6 served the same purpose, the inmates being negligent and refractory and allowing mosquitoes to enter constantly. Some of the latter were found infected so that we were able to predict the epidemic which afterwards developed attacking 12 out of the 14 inhabitants. Among the controls on the Cervara line 24 persons contracted malaria and at the station of Cervara, renowned for its malaria, all were attacked. In the control zone of Pontegalera, two persons who had acquired immunity from having had the disease previously escaped infection. On the other hand, in the linemen's cottages which were protected, out of 24 persons four were attacked, but these were on night duty and took no heed of our instructions. Three of them were ill for a long time, two from tertian, spring and autumn varieties respectively, and one from quartan fever. In spite of quinine administered promptly and abundantly they relapsed several times and their blood contained a large number of gametes—that is to say, of those parasitic forms most dangerous for contagion. At the same time their wives and children living in the protected houses along with them enjoyed immunity from the fever. The disease did not therefore spread through a whole household in the usual way, and *for the first time since the construction of these lines of railway the families of the railway servants were able in highly malarious localities to pass the whole summer and autumn in the Campagna without contracting fever.*[5]

The result of these experiments, which were the first of their kind in malarial districts, very greatly impressed Manson,[6] who came to see my field of experiments at Cervara,[7] and they induced the directorate of the Adriatic Railway Company to extend the system in Latium from Prenestina to Salone and on the Castelgiubileo line; and also into Southern Italy near the station of Ofantino in the Province of Foggia.[8] The Southern Railways Company in its turn determined to extend the same experiments to the most malarious of the linemen's cottages on the lines of Terracina, Anzio, and Pontegalera, here in Latium, and to those near the station of Albanella in the province of Salerno. The conduct of the former of these two experiments was entrusted to me, the other, in Southern Italy, to Grassi, who was member of a consultative committee appointed for the purpose by the same railway company.[9] In like manner the Sicilian railways have also extended to the sections of their lines lying in malarial zones the same system of prevention. I must, however, limit myself to an account of the results of the new prophylaxis as obtained in Latium, where, encouraged and taught by the experience of last year, I attempted to defend against malaria in the season which is now drawing to a close, not only the railway servants, but also the caretakers in the Campagna and the peasants. I shall now briefly recount what I did for each of these and the results which I obtained.

A.—PROTECTION OF THE RAILWAY SERVANTS.

The method employed was that of the previous year, with the difference that wire-gauze[10] was everywhere substituted for the muslin, and that a large cage of wire-gauze was placed in front of the door so as to form a kind of porch or ante-chamber. This addition of a porch, first suggested by Dr. Blessich, is very useful in giving greater protection to the rooms on the ground floor and affording a shelter where in the summer the family can have the benefit of the open air without actually going outside. As a rule, the doors were made to close automatically, and to make sure that no mosquitoes entered by the chimneys the latter were also covered by gauze with a wider mesh. To render easier the discovery and destruction of any mosquitoes that might chance to enter, the walls of the rooms were whitewashed.

Large and repeated doses of quinine had been administered to any persons who had had relapses in the spring as well as to the very few patients with primary infections, the treatment being completed in all cases with arsenical and ferruginous preparations. No prophylactic medicine was given except to those on night duty on the Adriatic lines, whom I had not been able to induce the previous year to wear regularly at night time the special head-gear and gloves provided for the purpose. They were made to take euchinin in a daily dose of from 0·50 to 0·75 centigramme. On the Mediterranean lines we had not the same difficulty, because there mosquitoes and other insects are so numerous as to cause intolerable annoyance, apart from any danger of their conveying fever. The results which we obtained were briefly as follow.

1. Prenestina-Salone line. On this line we this year protected also the houses on the Cervara-Salone section which last year served us as controls. We were able, however, to use for this latter purpose the intermediate stations of Cervara and Salone as well as the section beyond from Salone to Lunghezza. Now in the zone which was protected out of 52 persons only two contracted fever—namely, a watchman on night duty attacked on June 15th (before the commencement of the prophylactic treatment of those engaged in this dangerous service) and a woman attacked on Oct. 15th who had always shown herself refractory to our recommendations. The watchman, notwithstanding abundant and repeated doses of quinine, had had three relapses at long intervals; nevertheless, his malaria did not prove infectious to the other seven persons who lived in the same house. In the rest of the protected zone 50 persons (21 adults and 29 children) remained free from fever. On the other hand, in the zone of control, two out of three persons sickened at the station of Cervara, 16 out of 18 on the Salone-Lunghezza section, six out of 10 in the station of Salone—the four who escaped having been in the habit of frequently sleeping at Rome—and in the houses of the country people along the protected portion of the line and in the huts of Salone there were about 100 peasants, all of whom sickened. Also on the farms of Rustica, Cervelletta, Bocca di Leone, and Gottifredi all, or nearly all, took the fever. *Our protected zone thus remained almost free from malaria in the midst of a fever-stricken region, and in order to render healthy a district where during the preceding year*

[3] I primi esperimenti di protezione del personale ferroviario dalla malaria, Relazione del dott. Baldi, Supplemento al Policlinico, 21 Febb., 1900.

[4] These frames were never removed from the windows of the first floor of cottage No. 19 on the Pontegalera line and now, two years later, are still in excellent preservation. For those who cannot afford metallic frames the muslin ones may be recommended.

[5] Vide Bollettino n. 3 della Società per gli Studi della Malaria. Sitting of Feb. 5th, 1900.

[6] Brit. Med. Jour., Feb. 10th, 1900.

[7] A very pleasing sequel to this visit was the experiment of Dr. Sambon and Dr. Low who, in order to obtain documentary evidence as it were of the efficacy of the new prophylaxis, came and passed the malarial season in the most deadly spot in Ostia in a hut protected against mosquitoes and who, together with two other persons, have remained all the time in perfect health.

[8] Dr. Martirano, who has carried out the prophylactic experiments at Ofantino on 28 persons, has not had a single case of primary malarial infection to report.

[9] Professor Grassi published before the season had come to an end an anticipatory report, and this without any hint that others had been working before and were still at work for the railway company and for the Society for the Study of Malaria, by whom the funds were supplied.

[10] The diameter of the mesh of the gauze should not be greater than two millimetres at most; this size prevents the entrance of any but a very small culex. To exclude all sizes of mosquitoes with certainty the mesh should have a diameter of only from 1 to 1·5 millimetres. A coat of varnish is applied to preserve the netting.

everyone had had fever it sufficed to extend to it the new method of prophylaxis.

2. Castelgiubileo line (from the seventh to the nineteenth kilometre inclusive). On this line the experiment succeeded in a degree highly convincing. Here there are two types of lineman's cottage—the new and the old; the latter from its peculiar construction does not lend itself to being protected and was therefore left to serve the purpose of control. This turned out to be a fortunate circumstance because the old and the new cottages as nearly as possible alternate with one another. Now in the protected houses out of 57 inhabitants not one took fever, while in the unprotected houses out of 51 inhabitants only seven escaped, and these were nearly all adults, immune in consequence of previous attacks. Among the children, on the other hand, only two out of 29 escaped infection in the unprotected huts, whilst of the 36 children in the protected houses not one was attacked. We also made two further control experiments. On August 23rd it became necessary, for reasons connected with the railway service, to transfer a family consisting of a husband, wife, and son from cottage No. 17, where they had always enjoyed good health, to the next cottage, No. 16. About a month afterwards the wife and child were attacked by fever. On the other hand, a family consisting of husband, wife, and six children, all of them suffering from malaria, had been placed in cottage No. 17. We at once put them upon a full and prolonged course of quinine followed by tonic treatment with arsenic and iron. Secure in their protected house from the baleful mosquito, this family has made an excellent recovery, although their convalescence and cure had to go on through the height of the malarial season. Only one of the children, in whom the relapses were more obstinate, still remains in somewhat poor condition. On this Castelgiubileo line the proof of the value of the new prophylaxis has thus been most decisive and eloquent. *Of a whole community of persons all subjected to the same conditions in other respects, those whom we defended against mosquitoes have remained free from fever, whilst those left unprotected have nearly all been attacked.* It is as if we had a book with its pages alternately white and black, the white pages corresponding to our protected houses and families, the black representing those left unprotected. No less decisive in their results were the experiments made on the other lines.

3. Pontegalera line. Here, in the section outside of the protected zone, in cottages Nos. 15 to 19 inclusive, out of 42 railway servants only three escaped the fever. In our protected zone, on the other hand, out of 36 persons only two contracted it, while in the section further on, from the twenty-seventh to the thirty-third kilometre, out of 10 persons only one remained unattacked. As further controls we had the station of Pontegalera, placed almost in the midst of our zone of experiment, where out of seven persons six were attacked; the first lineman's cottage on the Fiumicino railway, where all of the three inmates suffered; and some neighbouring country cottages in which at Chiesola 30 inmates out of 30 were attacked, at the hamlet of Pontegalera four out of four, and at a house placed almost midway between two of the protected railway cottages 12 persons out of 12.

4. The Anzio line. Here we selected for protection the two cottages most noted for malaria—namely, those at the twenty-fifth and thirty-second kilometre. Now in these two cottages, in each of which were four persons, all remained perfectly well, and four other persons who came from the Terracina line to live in them suffering severely from malaria recovered their health completely. On the other hand, in the cottages from the eighteenth to the twenty-third kilometre, out of 39 inmates 36 sickened with fever; in the cottages lying between the two protected ones nine out of nine; and in those beyond our No 32 cottage eight out of 10. Among a squad of linemen numbering six there were four fever patients, the two who escaped belonging to the family protected by me at the twenty-fifth kilometre.

5. The Terracina line. In the railway cottages along this line, so terribly malarious, I had 30 persons protected between the station of Frasso and Terracina. Of these only two suffered from primary infections—namely, a lineman who by mistake went on night duty without his mosquito hood and a little girl who had had quartan fever. In two persons who had become malarial cachectics during the previous two years æstivo-autumnal attacks recurred with obstinacy up to the first few days of October, in spite of treatment. None of the others had malaria. On this line also I was able to establish a series of controls analogous to those I have described on the Castelgiubileo line by leaving here and there cottages unprotected. Of 37 persons inhabiting these latter 35 took fever.

To sum up, of 207 railway employés subjected to the new prophylaxis against malaria during the seasons 1899 and 1900 only 10 contracted fever, although they were living in the most unhealthy regions of Latium and in the midst of their fellows, all, or nearly all, of whom were stricken by the disease. Also, in houses defended against the invasion of mosquitoes malaria loses its contagiousness and no longer gives rise to the usual epidemic. Further, the treatment of, and convalescence from, malarial fever can be carried on in malarious localities in houses protected from the invasion of mosquitoes quite as well as in places where the air is good.

It is to be noted, in conclusion, that this favourable result was obtained with the utmost simplicity, all that was necessary being a little persuasion with a small present, and the supervision which I and two railway officials who assisted me, one on the Adriatic and the other on the Mediterranean railways, were able to exercise. A similar result could therefore be attained wherever and whenever desired, and I am able to say that these two railway companies propose to secure it on the largest possible scale.

B.—PROTECTION OF THE CARETAKERS IN THE CAMPAGNA.

Two Roman companies—namely, the Società dell' Acqua Marcia and the Società dell' Elettricità—have each a caretaker's house on the road from Rome to Tivoli, both situated in localities with a bad type of malaria which has hitherto attacked the families residing in them every year; or rather, I should say, the wives and the five children, for the husbands, owing to many years of past suffering from the disease, have become immune. This year for the first time the wives and children have escaped infection, and this immunity they owe to my having had their houses protected before the commencement of the malaria season in the same way as those of the railway people with wire-netting. As I had here to deal with persons of intelligence who could be trusted to carry out my instructions carefully I left this experiment to proceed, as it were, of its own accord. At the beginning of the season I went with the companies' engineers, first to order, and then to approve, the protective arrangements for the houses. I gave the requisite instructions (to remain indoors from an hour before sunset till an hour after sunrise and to kill any mosquitoes that might accidentally gain entrance) and after that I did not return. From the engineers, however, I have from time to time received news of the welfare of these people, together with thanks for the danger escaped. The same protection may thus be secured whenever they desire by all the caretakers of the communal, provincial, and Government roads, of monuments, and of the works for reclaiming waste lands in the many malarious districts of Italy.

C.—PROTECTION OF THE PEASANTS.

Malaria rages most of all among the field labourers, working as these do in the most dangerous hours of the evening and night at the most unhealthy time of year—namely, when the principal crops are reaped—living in habitations of a wretched or defective kind—or without any habitation whatever—and withal very insufficiently clad. Such conditions render it very difficult to carry out among these people the prophylactic measures which would be, and ought yet to become, of the greatest benefit to them socially. I wanted notwithstanding this to make the attempt. Accordingly, I protected in the usual way, with nets over the windows and doors, the hamlet on the farm of "Le Castella" and about half of the hamlet of the "Cervelletta." Among the houses so protected on the latter farm was one with a terrible reputation for the number of victims which malaria had yearly claimed from it, so much so that the proprietor wished to shut it up. Below this house, in which two families (six persons) were going to live, was another, a sort of tavern, which I also protected with the netting. And, finally, I determined to make the same experiment with that most primitive of all human habitations, the straw hut, closing thoroughly with straw all the holes in its sides, and with wire gauze the openings for allowing the smoke to escape; I placed at its entrance a big cage of

the same material, furnished in its turn with two doors made to close automatically. I protected three huts in this way, two at the Cervelletta and one at the Castella.

It is more difficult to induce half-educated people to believe that malaria may be conveyed by the bites of mosquitoes than it is to convince the ignorant peasantry of the fact. On this account I met with much less difficulty from some of the more intelligent among the latter than I had expected in getting them to carry out the new prophylaxis so as to insure success.

In the hamlet of the Castella the family of the manager and the medical man of the Red Cross Society escaped infection, notwithstanding that some stagnant water from a ditch, which was brought into the house in an old cask, might have developed many mosquitoes. So also the 17 Lombard peasants who slept in the protected part of the hamlet of Cervelletta were rewarded for the great care they took by only one of their number falling sick with malaria, a man who was in the habit of getting drunk from time to time and while in this helpless state of sleeping in the open air. In the part of this hamlet which served as control we had at the same time 10 cases of primary infection and several relapses from the previous year's epidemic. And the house so cursed with the disease in former years had no fresh cases in it. One family was, however, obliged to leave its protection in the early days of September, and now (between Oct. 15th and 17th) the two children have already contracted fever.

In the midst of the other straw huts all stricken with malaria, the protected hut at the Castella, with a family, consisting of father (a very industrious man), mother, and three children, remained, wonderful to relate, quite free from fever, as did also one of the protected huts at the Cervelletta with five inmates—father and mother and three children. In this latter hut we never found mosquitoes; a few which found their way as far as the outside cage were killed. On the other hand, in the third protected hut, notwithstanding all our warnings, we found mosquitoes in the cage every morning and also often inside the hut itself. Finding it impossible to induce this family, on account of their apathy or their ignorance, to take the necessary precautions, we removed the protection, and three out of four of the inhabitants took fever. Thus, so long as the peasants were careful, they were able to defend themselves from malaria even in the most primitive of dwellings, the straw hut.

In order to protect from fever the nomadic rural population who come down to the Campagna at the season when the most dangerous kind of work is in progress, and who are easily infected on account of their sleeping in the open, the Caetani family are making a preliminary trial in the Pontine Marshes of a large hut constructed of wood and wire-gauze which can be taken to pieces and transported to wherever it is wanted.

Naturally, in order to make quite complete what we may call this mechanical prophylaxis for the peasantry it would be necessary to stop their work in the more dangerous hours. Besides this one must not lose sight of the ideal kind of prophylaxis for people who work—namely, that of making them artificially immune against the disease. With this object in view I have made, and continue to make many experiments, especially with euchinin, and I propose shortly to give an account of the results obtained by this medicinal method of procuring immunity. For the present I wish to insist upon the fact that by means of the mechanical prophylaxis for malaria (protecting the houses and the uncovered parts of the body) a great step in advance has been made for practical purposes. Among railway employés, caretakers, and even the peasants of the malarious Campagna the lesson of the last two years has been so persuasive that all of those who have hitherto served as controls are anxious to be protected during the next fever season. Within no very distant date all houses in malarious localities will be defended against the entrance of insects; thus during the day there will be no inconvenience from flies and other insects of an unclean, troublesome, or injurious kind, and at night there will not be the annoyance and evil effects of mosquitoes. In all low-lying, warm, moist places, where myriads of insects of every species swarm, this mechanical means of defence against their invasions will become the best of the prophylactic rules for the prevention of malaria and other diseases.

THE METROPOLITAN BOROUGH COUNCILS.

THE following list, compiled from official information, is a substantially complete enumeration of the medical men who have been elected members of the first metropolitan borough councils. There are, however, we believe, one or two vacancies to fill in consequence of the election of aldermen from the council, but the filling of these vacancies will probably leave the list unaltered.

Battersea.—Councillor: Mr. L. S. McManus, M.D., M.Ch. R.U.I.

Bermondsey.—Councillor: Mr. J. Mulqueen, L.R.C.P., L.R.C.S. Irel.

Bethnal Green.—Councillors: Mr. W. A. Farebrother, L.S.A., and Mr. F. E. Rogers, M.R.C.S. Eng., L.R.C.P. Lond.

Camberwell.—Councillor: Mr. A. Smith, L.R.C.P. Irel.

Chelsea.—Councillor: Mr. J. W. Erskine, B.A., M.B. T.C.D., L.R.C.S. Irel.

Deptford.—Councillor: Mr. F. T. Tayler, B.A., M.B., L.R.C.P. Lond., M.R.C.S. Eng.

Finsbury.—Councillor: Mr. E. Jones, M.R.C.S. Eng., L.R.C.P. Lond. (Chairman of the Public Health Committee).

Fulham.—Councillor: Mr. E. Cooney, L.R.C.P. Edin., L.F.P.S. Glasg., L.S.A., D.P.H. Camb.

Greenwich.—Mayor: Surgeon-Lieutenant-Colonel R. Gooding, V.D., M.D. Lond., M.R.C.S. Eng., J.P.

Hackney.—Aldermen: Mr. F. H. Daly, M.D. R.U.I., L.R.C.S. Edin., J.P., and Mr. T. Hoskin, L.R.C.P. Lond., M.R.C.S. Eng., J.P. Councillors: Mr. J. O. Adams, M.D. Durh., F.R.C.S. Eng., Mr. F. M. Miller, M.R.C.S. Eng., L.R.C.P. Lond., Mr. F. Wallace, L.R.C.P. Lond., M.R.C.S. Eng., and Mr. M. E. A. Wallis, L.R.C.P. Lond., M.R.C.S. Eng.

Hammersmith.—Councillors: Mr. O. C. Coker, L.R.C.P. Lond., L.S.A., and Mr. W. A. Davidson, L.S.A.

Hampstead.—Councillors: Mr. E. C. Andrews, M.D. Lond., M.R.C.S. Eng., Mr. C. W. Cunnington, M.R.C.S. Eng., Mr. A. O. Grosvenor, M.D. Edin., M.R.C.S. Eng., and Mr. F. E. Scrase, F.R.C.S. Eng.

Holborn.—Councillor: Mr. W. R. Smith, M.D. Aberd., F.R.S. Edin.

Islington.—Councillor: Mr. John Walker Smyth, L.R.C.P., L.R.C.S. Edin.

Kensington.—Councillor: Mr. F. H. Alderson, M.B. Durh., M.R.C.S. Eng., L.R.C.P. Lond., and Mr. E. D. Vinrace, M.R.C.S. Eng.

Lewisham.—Alderman: Mr. J. W. Elliott, M.R.C.S. Eng., (retired). Councillors: Mr. F. J. L. Hart, M.B., C.M. Edin., Mr. F. S. Smyth, F.R.C.S., L.R.C.P. Edin., and Mr. H. Visger, M.R.C.S. Eng., L.S.A.

St. Marylebone.—Councillors: Mr. L. A. Bidwell, F.R.C.S. Eng., and Mr. J. Edmunds, M.D. St. And., M.R.C.P. Lond., M.R.C.S. Eng.

Paddington.—Councillors: Mr. J. L. Atkinson, L.S.A., Mr. B. F. Popham, M.D. St. And., L.R.C.S. Irel., L.S.A. Mr. A. Prince, L.R.C.P. Edin., M.R.C.S. Eng., and Mr. D. A. Waite, M.A. Oxon., M.R.C.S. Eng., L.R.C.P. Edin.

St. Pancras.—Alderman: Mr. W. Smith, M.R.C.P. Edin. Councillors: Mr. J. A. Angus, Mr. W. F. Hazel, M.R.C.S. Eng., L.S.A., Mr. R. P. Long, L.F.P.S. Glasg., L.S.A., Mr. E. F. T. MacCarthy, L.R.C.P., L.R.C.S. Irel., Mr. R. Paramore, M.D. Brux., M.R.C.S. Eng., and Mr. J. Thompson, M.D. St. And., M.R.C.S. Eng., L.R.C.P. Edin.

Shoreditch.—Councillor: Mr. J. Davies, M.D. Durh., M.R.C.S. Eng., L.S.A.

Southwark.—Alderman: Mr. W. G. Bott, L.R.C.P. Edin., M.R.C.S. Eng. Councillor: Mr. E. C. Perry, M.A., M.D. Cantab., F.R.C.P. Lond., M.R.C.S. Eng.

Stoke Newington.—Councillor: Mr. R. Ostlere, M.B., C.M. Aberd.

Wandsworth.—Alderman: Mr. T. A. Ives Howell, L.R.C.P. Lond., M.R.C.S. Eng. Councillors: Mr. J. Gay, L.R.C.P. Lond., M.R.C.S. Eng., Mr. C. R. Lucas, M.R.C.S. Eng., L.R.C.P. Lond., and Mr. Mark Robinson, M.R.C.S. Eng., L.R.C.P. Lond.

Westminster.—Councillor: Mr. H. A. Des Vœux, M.D. Brux., L.R.C.P. Lond., M.R.C.S. Eng.

Woolwich.—Councillor: Mr. J. Jeken, M.R.C.S. Eng., L.S.A.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Condition of the Borough of Windsor, and upon the Character of the Town Council's Administration, by Dr. H. TIMBRELL BULSTRODE[1]—Attention is drawn elsewhere in our present number to the immediate circumstances which determined the issue of this report. It would seem, however, that the sanitary condition of Windsor has on several previous occasions been the subject of investigation for the Local Government Board, particularly in 1886 when, in consequence of local demands following on the publication of the report[2] an inquiry was held by Dr. H. Airy and Mr. Arnold Taylor, and a series of official recommendations to the Town Council was issued.

In the present report ample evidence appears that the backwardness of local administration in Windsor, which was conspicuous 15 years ago, has largely remained a characteristic of the borough. If this has been due mainly to the ignorance or apathy of the Windsor public Dr. Bulstrode has now done much to enlighten them. Departing from the somewhat frigid recital of facts of which official reports are apt to consist, he has produced a document which should certainly succeed in capturing the attention of that important person in modern politics, the "man in the street." After giving details as to the present estimated population (12,715) and a description of the physical and geological features of the town, Dr. Bulstrode deals with its water-supply. Shallow wells, which used to be common in Windsor, have now disappeared, and the public supply of the Windsor and Eton Waterworks Company serves the whole district. This supply is obtained by pumping from several wells sunk in river gravel alongside the Thames, the source of supply being largely composed of subsoil water and of Thames water which has percolated to the wells through a greater or less thickness of natural gravelly soil. The water is not filtered before being pumped into the service pipes. Certain of these wells are within a few yards of inhabited dwellings, but Dr. Bulstrode was assured that special precautions had been taken as regards the sewers serving these houses. Although, having regard to the sources of supply, systematic examination, chemical or bacterial, of water from each separate well is unquestionably desirable, the only examination hitherto practised has been occasional chemical analyses made for the water company of samples taken from the town mains, which of course represent a mixture of water from all the wells.

As regards excrement disposal, "up to a comparatively recent date there was a large number of closets not provided with water, and the unsatisfactory method of hand-flushing was resorted to." Much amendment in this respect has, however, been lately made. With respect to house-drains in the poorer parts of Windsor their "nature, direction, and soundness is usually a matter of pure conjecture. Ventilation is often entirely absent, as also are opportunities of drain inspection. Probably but few of the older drains would withstand the water test, and it does not seem that any very extensive effort has been made to ascertain the exact state of affairs in this respect. Numerous instances of defective and broken traps came to my notice and on several occasions complaints of smells from the house sinks were made." These drains were probably laid before the existing by-laws came into force; in certain new houses, however, Dr. Bulstrode found that in laying house-drains the by-laws had been contravened.

The sewers of Windsor are of diverse kinds. "Some are old brick barrel sewers, others pipe sewers with clay joints, and others, again, as for instance the more recent, pipe-sewers with proper joints. The levels vary considerably, and in certain instances the fall of the sewer is in the opposite direction to the flow of sewage." The contents of the main outfall sewers are pumped on to a sewage-farm on an island at Old Windsor. This outfall sewer is liable to be blocked during a considerable portion of each 24 hours when pumping is not going on, and hence "acts as a storage tank"; this accumulation "must place great strain on the sewers and facilitate deposit in them, a fact easily verified by an examination of the walls of the inspection chambers." Surface water and drainage, which reaches Windsor sewers by the "Clewer ditch," give rise to considerable inconvenience by increasing the pumping requirements. House refuse in the poorer parts of Windsor is often stored in ash-pits which are much dilapidated or altogether broken down, and frequently heaps of refuse are allowed to accumulate on the bare ground. "In times of rain this decomposing refuse is washed into the subsoil in the neighbourhood of inhabited houses, and in times of drought and wind is scattered broadcast. This aspect of public health control in the borough has, there can be no doubt, been much neglected." Save for a temporary structure for cases of small-pox, situated alongside the sewage farm, there is no isolation hospital for the borough. Dr. Bulstrode points out that some responsibility in this matter attaches to the medical officer of health, Dr. E. Casey, whose advice to the town council shows that his views on the subject "are not those held by the vast majority of his colleagues in the public health service." These views Dr. Bulstrode combats, setting out in reply a temperate claim for the utility of isolation hospitals on broad lines of expediency to the community and advantage to the individual.

With regard to the housing of the poor of Windsor Dr. Bulstrode shows that a most undesirable state of affairs exists. He gives in illustration detailed notes of his inspection of Victoria Cottages, a row of about 100 houses with dilapidated roofs, failing ceilings, unpaved yards, defective gullies, broken rain-pipes, accumulations of refuse in backyards, and many other deficiencies rendering them, in his view, "difficult to regard as suitable for human habitation." Of this visit he says: "I was especially invited to enter certain houses, the tenants beckoning to us to inspect their abodes and to see the conditions under which they were obliged to live. There was distinctly a pathetic side to this inspection of Victoria Cottages, the inmates seeing members of the town council with me, thinking that at last, at any rate, there would be some redress." In other streets, such as River-street (formerly Bier-lane, which figured prominently in the report in THE LANCET in 1885), Distil House-row, Red Lion-row court, Garden-court, Keppel-row, and Queen's-square, numerous instances of hopelessly dilapidated and overcrowded dwellings are also detailed. In the common lodging-houses the custodians were frankly ignorant of, and systematically transgressed, the borough by-laws—a copy of which the inspector seems to have had considerable difficulty in securing. Slaughter-house by-laws were also disregarded. As regards storage of milk in many cases "the circumstances under which the cleansing and the storing of the milk-pans were carried out left much to be desired, and customers would not have been reassured by a visit to these places."

Dr. Bulstrode reviews in considerable detail the attitude of the town council (which he describes as "without backbone") and their officers towards the measures of sanitary progress which should have been taken to remedy the various evils which he has described. Taking as instances certain specific nuisances he gives a chronological history of the dealings of the local authorities with them. From these we gather that five years of reports and discussion may not suffice to produce amelioration in some of the worst dilapidated cottage property in the place, and that it may take the sanitary inspector four years of reports and orders before a proper supply of water can be obtained for a closet.

Not the least instructive part of the report lies in the indications furnished by the inspector of the degree of responsibility respectively attaching to the town council and to their officers in matters such as these. That his inspection resulted in immediate improvement in certain directions is evidenced by a memorandum by the town council which is appended to the report. This circumstance seems hopeful for the future.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 9d.
[2] Report of THE LANCET Special Commission on the Sanitary Condition of Windsor: THE LANCET, August 15th, 1885, p. 306.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6323 births and 3923 deaths were registered during the week ending Nov. 24th. The annual rate of mortality in these towns, which

had been 17·6, 16·9, and 17·6 per 1000 in the three preceding weeks, was again 17·6 last week. In London the death-rate was equal to 17·2 per 1000, while it averaged 17.9 in the 32 provincial towns. The lowest death-rates in these towns were 10 0 in Norwich, 10·5 in Cardiff, 11·5 in Huddersfield, and 13·1 in Croydon; the highest rates were 21·0 in Manchester and in Preston, 21·9 in Liverpool, 23·2 in Bolton, and 24·3 in Salford. The 3923 deaths in these towns included 351 which were referred to the principal zymotic diseases, against numbers decreasing from 485 to 353 in the four preceding weeks; of these, 76 resulted from diphtheria, 68 from whooping-cough, 65 from "fever" (principally enteric), 58 from measles, 46 from diarrhœa, and 38 from scarlet fever. No death from any of these diseases occurred last week in Wolverhampton; in the other towns they caused the lowest death-rates in Bristol, Cardiff, Norwich, and Newcastle, and the highest rates in Brighton, Swansea, Blackburn, and Sheffield. The greatest mortality from measles occurred in Swansea and Gateshead; from whooping-cough in Derby, Preston, and Sheffield; from "fever" in Plymouth; and from diarrhœa in Swansea, Blackburn, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the 33 towns. The 76 deaths from diphtheria included 22 in London, 12 in Sheffield, eight in Leicester, six in Leeds, and five in Liverpool. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns; two cases of small-pox were admitted into the Metropolitan Asylums hospitals during last week, and both remained under treatment on Saturday last, Nov. 24th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2725, against numbers increasing from 1703 to 2728 on the 12 preceding Saturdays; 246 new cases were admitted during the week, against 336, 289, and 261 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 164 to 352 in the seven preceding weeks, declined again last week to 321, and were 106 below the corrected average. The causes of 51, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Salford, and Newcastle, and 11 other smaller towns. The largest proportions of uncertified deaths were registered in Liverpool, Huddersfield, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·2 and 19·9 per 1000 in the two preceding weeks, further rose to 20·3 during the week ending Nov. 24th, and showed an excess of 2·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11·9 in Leith and 16·9 in Edinburgh, to 24·9 in Greenock and 25·2 in Paisley. The 628 deaths in these towns included 25 which were referred to whooping-cough, 20 to diarrhœa, 8 to measles, six to "fever," five to scarlet fever, 4 to diphtheria, and one to small-pox. In all, 69 deaths resulted from these principal zymotic diseases, against 62 and 75 in the two preceding weeks. These 69 deaths were equal to an annual rate of 2·2 per 1000, which was 0·6 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 22 in each of the two preceding weeks, increased last week to 25, of which 17 occurred in Glasgow and five in Greenock. The deaths from diarrhœa, which had declined from 53 to 16 in the seven preceding weeks, rose again to 20 last week, and included seven in Glasgow, four in Dundee, three in Edinburgh, and three in Aberdeen. The fatal cases of measles, which had been five and 13 in the two preceding weeks, declined again last week to 8, of which five were registered in Aberdeen and two in Edinburgh. The deaths referred to different forms of "fever," which had been seven in each of the two preceding weeks, declined to six last week, and included three in Glasgow and two in Aberdeen. The fatal cases of scarlet fever, which had been four in each of the two preceding weeks, rose last week to five, and were all registered in Glasgow. The deaths from diphtheria, which had been seven and 11 in the two preceding weeks, declined last week to four, of which two occurred in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 98 to 163 in the seven preceding weeks, declined again last week to 156, and were 28 above the number in the corresponding period of last year. The causes of 24, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased from 20·0 to 26·0 per 1000 in the four preceding weeks, further rose to 26·1 during the week ending Nov. 24th. During the past four weeks the death-rate in the city has averaged 24·1 per 1000, the rate during the same period being 17 0 in London and 17·4 in Edinburgh. The 175 deaths belonging to Dublin registered during the week under notice were one in excess of the number in the preceding week, and included 19 which were referred to the principal zymotic diseases, against 11 in each of the two preceding weeks; of these, eight resulted from "fever," five from whooping-cough, five from diarrhœa, and one from diphtheria. These 19 deaths were equal to an annual rate of 2·8 per 1000, the zymotic death-rate during the same period being 1·3 in London and 1·0 in Edinburgh. The deaths referred to different forms of "fever," which had been four and three in the two preceding weeks, rose again last week to eight. The fatal cases of whooping-cough, which had been one and two in the two preceding weeks, further increased to five last week. The deaths from diarrhœa, which which had been six and three in the two preceding weeks, rose again last week to five. The 175 deaths in Dublin last week included 30 of infants under one year of age and 38 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a marked decline. Five inquest cases and three deaths from violence were registered, and 63, or more than a third, of the deaths occurred in public institutions. The causes of 13, or more than 7 per cent., of the deaths in the city last week were not certified.

ROYAL LONDON OPHTHALMIC HOSPITAL GUILD.

THE first annual meeting of the Royal London Ophthalmic Hospital Guild was held in the board-room of the hospital on Thursday, Nov. 22nd. Mrs. JOHN TWEEDY, the chairman of the committee, who presided, in briefly summarising the aim and scope of the work of the Guild, said that its primary object was to aid the hospital by supplying special clothing for the use of the patients. The work of the past few months had been so satisfactory that the committee thought themselves justified in attempting to place the Guild upon a larger and more important basis, and with this object in view the patronage and coöperation of ladies well known for their interest and energy in good works was sought. The Lady Mayoress had consented to become the first President of the Guild. The great aim of the Guild would be the creation of a sinking fund for the hospital. It was sad to find a hospital, the pioneer and teacher in eye diseases, struggling for life through lack of funds. If the Royal Ophthalmic Hospital could feel sure of a sinking fund of £30 000 the interest would defray the expenses of rent, rates, and lighting.

The report, a very satisfactory one, was then proposed and adopted.

Lady Russell Reynolds, Lady Avebury, and Mrs. John Tweedy were subsequently appointed vice-presidents, Mrs. Gunn was re-appointed honorary treasurer, and Miss Braybrook secretary.

Among the rules of the Guild are the following:—

The objects of the Royal London Ophthalmic Hospital Guild are: (*a*) To provide some ward clothing for the patients while in the hospital, and to aid the hospital by giving garments for the operating theatre and the necessary household linen. (*b*) To promote any other work in connexion with the hospital which may from time to time commend itself to the council of the Guild.

The Guild consists of members (men and women) who are (*a*) Patrons, invited by the Council; (*b*) Working Members elected by the Executive Committee, contributing not less than 2s. 6d. annually, and also undertaking to furnish two garments per annum for hospital use, or to pay an additional sum of 2s. 6d. in respect of each garment; and (*c*) Associates, contributing not less than 5s. annually.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons F. J. Lilly to the *Doris* and G. S. Smith to the *Blake* and subsequently to the *Empress of India*; Surgeons M. C. Langford to the *Defiance* and R. R. Fasson to the *Blake* and subsequently to the *Empress of India*.

ROYAL ARMY MEDICAL CORPS.

Colonel Napoleon B. Major is placed on temporary half-pay on account of ill-health. Major Charles James Addison retires from the service receiving a gratuity.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the retirement from the service of the under-mentioned officers:—Lieutenant-Colonel Richard Careless Sanders, Bengal Establishment; Lieutenant-Colonel Henry David Cook, Madras Establishment; and Lieutenant Ernest Le Fevre Payne, Madras Establishment, half-pay.

VOLUNTEER CORPS.

Artillery: 1st Lincolnshire (Western Division, Royal Garrison Artillery): Surgeon-Captain T. W. J. Allen resigns his commission. *Rifle:* 14th Middlesex (Inns of Court): Arthur Maitland Ware to be Surgeon-Lieutenant.

TRANSVAAL WAR NOTES.

Civil Surgeon Stewart Kirkpatrick, R.A.M.C., who is ordered for duty in South Africa, sailed from Southampton in medical charge of the troops on board the *Tagus* on Nov. 27th.

Lieutenant L. N. Lloyd, R.A.M.C., Civil Surgeon A. E. Robinson, Civil Surgeon E. A. Hauseman, Major C. E. Faunce, R.A.M.C., Captain F. J. Wade-Brown, R.A.M.C., Civil Surgeon H. Baylis, I.M.S., Civil Surgeon N. B. Harman, and Civil Surgeon H. B. Maunsell have been discharged from hospital to duty.

Colonel A. W. Duke, R.A.M.C., and Major J. W. Jérome, R.A.M.C., are returning home invalided in the *Goth*.

Major W. G. A. Bedford, R.A.M.C., Major J. G. Black, R.A.M.C., and Captain K. M. Cameron, R.A.M.C., are returning home invalided in the *Simla*.

ARRIVAL OF SURGEON-GENERAL W. F. STEVENSON AT NETLEY ON HIS RETURN FROM THE SEAT OF WAR.

There were great rejoicings at Netley on Nov. 24th, on the occasion of the return of Surgeon-General W. F. Stevenson from the seat of war in South Africa. Some days before his arrival the ladies of the station had formed themselves into a reception committee with a view to the decoration of the railway station and the route thence to Surgeon-General Stevenson's residence. Under the guidance of the committee and with the help of the non-commissioned officers and men of the Royal Army Medical Corps, and of the coastguards and railway employés, the railway station and roadway were most tastefully and appropriately decorated. The whole of the station was hung with Union Jacks and other flags and the entrance room was adorned with banners and flowering plants, flags, and devices. Three frames were erected on which were words and mottoes picked out in green leaves on a white ground. On the arrival platform the words were "Welcome Home"; on the departure platform (Southampton) was the motto of the Royal Army Medical Corps, "In arduis fidelis"; while over the gateway leading to the Surgeon-General's house was a triumphal arch bearing the Celtic motto, "Cead mille failthe." The *Tantallon Castle*, in which Surgeon-General Stevenson travelled home, was sighted off Hurst Castle at five minutes past 12 o'clock and she arrived at the Southampton Docks soon after 2 P.M. Surgeon-General Stevenson was the first officer to land and was met by his wife and daughter and some friends. Leaving Southampton shortly before four o'clock the party travelled to Netley, and arriving there at 4.25 P.M. they were received by the whole of the staff of the Royal Victoria Hospital and of the Army Medical School, in which latter institution the welcomed officer had so long served as Professor of Military Surgery, and by a large body of the general public resident in and around Netley. Surgeon-General Stevenson was most warmly cheered, both on his stepping on to the platform from the train and on his entering the carriage to drive to his home. All the houses on the route were gay with decorations, poles and bunting having been erected and streamers placed across the roadway over head. It will be remembered that Surgeon-General (then Colonel) Stevenson left Netley on Oct. 22nd, 1899, in the *Gascon* for South Africa, where, on arrival, he took over his appointment as principal medical officer of the line of communications in Cape Colony and in the Boer States and as consulting surgeon to the forces. From the time of the arrival of Lord Roberts at the front Colonel Stevenson, who was promoted by the Commander-in-Chief to be a local surgeon-general, formed one of the headquarters staff and accompanied Lord Roberts throughout the campaign. Surgeon-General Stevenson was only one day unfit for duty during the 13 months of his arduous work. The reception accorded to him at Netley on his return was a proof of the esteem and affectionate regard in which he is held by his brother-officers and by that section of the general public to which he is so well known.

THE POST OF COMMANDER-IN-CHIEF.

Sir Evelyn Wood is, in a way, filling the post of an Acting Commander-in-Chief pending the arrival of Lord Roberts, who is expected to be in England towards the end of the year. Notwithstanding that Lord Wolseley had consented at the request of the Government to remain in office as Commander-in-Chief until the end of November his retirement before the arrival of Lord Roberts in this country to take up the appointment has naturally given rise to some surprise. People are curious to know whether there is any truth in the rumoured existence of somewhat strained relations between the Horse Guards and the War Office. Although the matter is, of course, one of national interest it has nevertheless a bearing upon the medical as well as upon every other branch of the military service. Army medical organisation and the Royal Army Medical Corps will come in, too, for a good deal of consideration both inside and outside the War Office. It will be remembered that Lord George Hamilton, when speaking lately at Ealing, referred very pointedly to Lord Lansdowne, and stated that the late Minister for War had carried with him to his new office the goodwill and admiration of every one of the colleagues with whom he had been working for the past five years. "A good many of Lord Lansdowne's detractors would be shamefaced when the source of the disasters was made known. No man ever maintained a more chivalrous and magnanimous attitude than did Lord Lansdowne during the dark and dreary days of the war last year." It is easy to understand that the lines of demarcation between the functions of the civil and military branches of the War Department are not always very definitely defined but may occasionally overlap. The meeting of Parliament will be of great interest and fraught with important issues; meanwhile Mr. Brodrick is understood to be working away at his hard task of army reforms. In taking official and regretful leave of Lord Wolseley the nation does not forget the services which he has rendered. If he has never commanded a force against a European foe he has, nevertheless, been successful in the expeditions he has undertaken, has had a long and brilliant war service, and is a thorough soldier. He has, moreover, been largely instrumental in introducing some radical, far-reaching, and good changes in the army.

THE ROYAL NAVY LIST DIARY AND NAVAL HANDBOOK.

This is the fourth yearly issue of a diary and handbook which is of great use, both to naval men and others who are in any way interested in our first line of defence. The excellent diary gives a page to each day with complete schedules for recording drills and the making up of returns, while the miscellaneous information usually found in diaries is such that every officer in the Royal Navy must appreciate its value. Among this information is the following:—A Summary of the Year's Naval Progress by L. Carr Laughton; The Navy Estimates for 1900–1901, with full Statistical and Comparative Tables; the Naval Obituary for the Year, with the War and Meritorious Services of Deceased Officers; Tables of Tides and Tidal Constants and Monthly Astronomical Ephemeris; Original Descriptive Articles on the Tides and Terrestrial Magnetism; the Night Signals of the Principal Lines and Signals of Distress (revised to date); and List of Benevolent Funds and Institutions in connexion with the Navy. Messrs. Witherby and Co., 326, High Holborn, are the publishers, and the price is 3*s.* net.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The staff and members of the school entertained Major R. R. Sleman and Captain E. W. St. Vincent Ryan, two of the medical officers of the C.I.V., at dinner at the Florence Restaurant on Friday evening, Nov. 23rd. A large number assembled under the presidency of Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., senior medical officer. Two toasts only were given—"The Queen" and "Our Guests." In responding for the guests Major Sleman bore testimony to the gallantry of the C.I.V. stretcher-bearers in all the engagements in which the corps took part. At the action fought near Frederickstad on July 31st, Private C. J. Day and Private W. Shrimpton rushed forward to help a wounded yeoman in answer to an urgent message, and were both killed. Private T. Cooper at once volunteered to take their place. At the battles of Zand River and Diamond Hill the C.I.V. bearers did good work with both British and Boer wounded, and in the hospitals at Orange River and Glen they materially helped the Royal Army Medical Corps in coping with severe epidemics of enteric fever. Captain Ryan gave his experiences with the mounted infantry, and spoke of the chase after Cronje and his capture, describing also his visit to the laager to treat the Boer sick and wounded. The arrangements for the banquet were carried out by Surgeon-Captain Callender and a very enjoyable evening was spent.

ENDURANCE.

The following passage is extracted from a letter of Mr. Wilfrid Appleyard, a lieutenant in the 2nd East Surrey Regiment, now in garrison at Piatrand, to his father, Mr. J. Appleyard of Park Grange, Sheffield:—

Piatrand, Transvaal, Oct. 31st, 1900.

..... Yesterday we had another instance of Boer brutality and a wonderful proof of the remarkable endurance and vitality of savage races. It is not very nice family reading, but I must tell it you, as it seems to me to be such a really marvellous instance of endurance. Yesterday morning a Kaffir was admitted into our lines with his head lacerated most terribly. He actually walked into camp with a hole right through his head and his brain protruding through the wound and dried on to his forehead by the sun. He was a fearful sight, and his head was literally covered with flies. We handed him over to the doctor, to whom he afterwards stated that he had walked all the way from a Boer laager about 20 miles away. He had had a quarrel with his master, a Boer on commando, who as a punishment had broken his thumb with a sjambok and afterwards placed a revolver to the back of his head and fired a bullet through it. The native was left in a donga for dead, but after lying senseless for three days, exposed to the sun and flies by day and the cold by night, he actually walked the whole distance without food until he reached our camp. Our doctor takes it as an affront to medical knowledge that the man should be alive and has sent him to the hospital at Standerton for examination by the medical staff there.

DEATHS IN THE SERVICES.

Deputy Surgeon-General George Mackay died suddenly at his residence, 2, Learmonth-terrace, Edinburgh, on Nov. 20th, aged 88 years. In 1842 he received a commission in the Medical Department of the Honourable East India Company, and took part in the operations against the Mahrattas in 1844. In Burma in 1852 he was present at the actions which culminated in the capture of Rangoon and also at the occupation of Prome and Meaday (medal and clasp for Pegu), and was specially thanked for his services during the campaign. In 1864 he was appointed to the Military Finance Department of the Government of India. He retired in 1875.

Deputy-Surgeon-General James Carroll, on Nov. 27th, at his residence in Dublin.

THE WAR IN SOUTH AFRICA.

The daily journals have been bristling with interesting and exciting news of late in regard to the renewed activity in various directions of the scattered and disorganised Boer forces, the plot against Lord Roberts, the return of some of our troops to this country, and the presence of Mr. Kruger in France; but there is little or nothing of medical interest to be chronicled.

ROYAL LONDON OPHTHALMIC HOSPITAL.—A concert in aid of this hospital will be given at the Sandringham Club, 38, Dover-street, W., on Dec. 13th, at 3.30 P.M., arranged by Mrs. Bertram Blount. Tickets, 7s. 6d. each, or three for one guinea, can be obtained from the secretary of the club; from Mrs. Bertram Blount, 48, Bedford-gardens, W.; from Mrs. Dwelly, 18, Dawson-place, W.; or from Mrs. MacCallan, 32, Bedford-gardens, Kensington.

Correspondence.

"Audi alteram partem."

"OUR WIDOWS AND ORPHANS."

To the Editors of THE LANCET.

SIRS,—I was glad to see in THE LANCET of Nov. 17th (p. 1459) a letter from Mr. Christopher Heath pointing out the advantages of joining early in life the Society for the Relief of Widows and Orphans of Medical Men. Will you allow me, as one of the directors and therefore as being acquainted with the working of the society, to echo the president's appeal and to urge those of my younger brethren who are still at one of the London hospitals or who have recently commenced the practice of their profession somewhere within the prescribed radius of 20 miles from Charing-cross to become members? With this object I should like to mention but one out of many cases that might be quoted, and I will select the case to which Mr. Heath happened to allude in his letter. It occurred only the other day and will answer my purpose as well as any other. A medical practitioner who joined the society in 1891 died in March of the present year in Australia from the effects of an accident. His widow, who after paying all the debts found that the only provision for herself and her seven children was an insurance of £500, came home to this country not knowing what she was to do or which way to turn. The ages of the children ranged from 12 years to a few months. Knowing that her husband had subscribed to this society she made inquiries and was advised to lay her case before the directors. The facts of the case were investigated and to her surprise and joy she had allotted to her a grant for herself at the rate of £50 per annum and a grant at the rate of £10 per annum for each of the five eldest children, making a total of £100 per annum. In addition to this she will receive from the society a Christmas present of £25. The total amount her husband had paid in subscriptions was 19 guineas. Could there be a more striking illustration of the benefits that may accrue from belonging to this society? The two-guinea subscription is an investment to which it would be difficult to find a rival. It ensures—and only think what a comfortable reflection this is for a beginner—substantial help for the widow and children in case of premature decease, and in the event of the subscriber being able to leave his family sufficiently well off not to need help from outside the money goes to the relief of others less fortunately situated, and the annual subscription becomes one of the most admirable and deserving forms of charity to which a medical man, as such, can be called upon to contribute—a charity in the benefits of which only the thrifty can participate.

The society is worked at an almost absurdly small expense (most of its officers, including its solicitor, being unpaid) and its invested capital amounted on May 1st, 1900, to £97,687. Its financial soundness is therefore beyond question. Last year its total receipts available for payments were £3353, and, as its expenses were considerably below £250, it was able to make grants during the year to the extent of over £3000. Anyone who is sufficiently interested to desire further information may obtain it from the secretary, Mr. J. B. Blackett, 11, Chandos-street, Cavendish-square, W., who will also be glad to furnish forms of application.

I am, Sirs, yours faithfully,

CHARLES J. CULLINGWORTH.

Manchester-square, W., Nov. 26th, 1900.

EPIDEMIC PERIPHERAL NEURITIS

To the Editors of THE LANCET.

SIRS,—During the last six months I have been particularly struck with the large number of cases of alcoholic neuritis in this large Poor-law infirmary. Although there are generally a few cases in the wards (an average of 13) of late the number has been startling, and at the present time 52 cases of alcoholic peripheral neuritis are in this hospital. The large majority of the cases are amongst women and in many instances only a moderate amount of beer or porter has been taken. Careful investigation goes to show that in nearly all the cases the patients drank beer or porter

and not spirits. The association of pigmentation in many cases occurring suddenly and rapidly, completely covering the whole body, the occurrence of eruptions and soreness of the eyes, pointed to the suggestion that there was some poisonous agent in the food or drink, and a new light has been thrown upon the matter by Dr. E. S. Reynolds of Manchester who has actually found arsenic in samples of beer. This short note is only intended as preliminary, and as the subject is of such great importance the cases will be published in full at some future period.

I am, Sirs, yours faithfully,

NATHAN RAW, M.D. Durh., F.R.C.S. Edin.,
Nov. 28th. Medical Superintendent, Mill-road Infirmary, Liverpool.

THE MEDICAL DEGREE OF THE UNIVERSITY OF BIRMINGHAM.

To the Editors of THE LANCET.

SIRS,—A paragraph in the letter of your Birmingham Correspondent in THE LANCET of Nov. 24th, p. 1536, relating to degrees for practitioners, has led to a certain amount of misunderstanding. May I point out that the ordinance, of which I inclose a copy, only refers to those gentlemen who have taken out their entire course of medical study in the Birmingham School of Medicine?

I am, Sirs, yours faithfully,

BERTRAM C. A. WINDLE,
Dean of the Faculty of Medicine, University of Birmingham.
Nov. 26th, 1900.

[INCLOSURE.]

ORDINANCE CONCERNING PRIVILEGES OF PAST STUDENTS OF THE BIRMINGHAM MEDICAL SCHOOL.

That past students of the Birmingham Medical School who have taken out their whole course in Birmingham, and are duly qualified medical men, be permitted at any period during the five years commencing on the 1st of October, 1900, to present themselves for a Final Examination for the Degrees of Bachelor of Medicine and Surgery.

Subjects for examination.—(a) *Medicine, including therapeutics; (b) *surgery and operative surgery; (c) *midwifery and gynæcology; (d) pathology and bacteriology; and (e) forensic medicine and toxicology.

* This examination will consist of three parts: (1) written papers; (2) *viva voce*; and (3) clinical.

Approved by the University Council, June 13th, 1900.

"THE VESTRY OF CAMBERWELL AND THE ANTITOXIN TREATMENT OF DIPHTHERIA."

To the Editors of THE LANCET.

SIRS,—As the writer of the report and circular alluded to by your correspondent "Camberwell" I could not but be aware of the possibility that a certain amount of opposition would be aroused by them. At the same time, as they received the sanction of a committee on which two medical men sat (one as chairman) I feel that the responsibility is taken off my shoulders. I may, however, ask to be allowed to state in reply to "Camberwell" that the statement that antitoxin would cure 99 per cent. of cases was limited, in express terms, to "first-day" cases, though the quotation of the whole sentence would hardly have given pith to his criticism. As regards both this statement and the one as to the duration of prophylactic effect, I may say that all the most reliable statistics confirm them both. The case-mortality appears to me abundantly to justify the supposition that the use of antitoxin is confined to a small number of practitioners, and this mortality is deliberately under-estimated in my report, so as to avoid exaggeration.

One other letter in terms similar to those of "Camberwell" has reached me, and the writer now sends me his cases. Other communications in a very different strain have also come to hand and other sanitary authorities have made inquiries as to our system with a view to its adoption in their own districts. The number of cases, moreover, sent in for examination has nearly doubled since the issue of the report and circular, so that on the whole I feel justified in believing that "Camberwell's" opinion is shared by few. That Camberwell's practice may be followed by many other boroughs is my earnest hope.

May I be allowed, in conclusion, to refer to one important point in all such arrangements? The value of the provisions is considerably lessened if they are not at all times available. This being a private laboratory, though used for municipal purposes, specimens are received and reported on practically at any time throughout the year. If arrangements for this cannot be made the service which the offer of free diagnosis is capable of rendering is greatly detracted from. A laboratory which is closed from, say, 1 P.M. on Saturday to 10 A.M. on Monday, and observes Bank and other holidays, will often not be available when its services are most needed.

I am, Sirs, yours faithfully,

EDWARD C. BOUSFIELD,
Bacteriologist for the Borough of Camberwell.
Old Kent-road, S.E., Nov. 24th, 1900.

MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS—I agree absolutely with the opinion expressed by Dr. H. E. Armstrong in his letter in the *Times* of Nov. 13th. But I do not think he quite touches upon the question how this preliminary teaching of chemistry and the like can be best obtained and subsequently utilised. The council and staff of Epsom College have long held that the subjects referred to by Dr. Armstrong should be taught thoroughly as school subjects; at the same time the future student should not be allowed to specialise in science subjects until his general education has reached a certain standard and his faculties have been trained so as to be able to gain a firm hold of the elementary principles. Every student should be sent to a school where science is taught and the teaching recognised by the medical examining bodies. After he has passed through the ordinary course of study necessary for a good education he is introduced to the lecture-room, the chemical laboratory, and the biological-room, and in a class of, say, 20 students each individual works under the personal superintendence of his teacher and he is taught as far as possible to get an intelligent grasp of the subjects brought before him. In fact, our plan has been to teach all the subjects required for the matriculation and preliminary scientific examinations of the University of London, and the majority of our boys pass one or both of these tests. Many have also succeeded in obtaining scholarships afterwards at Oxford or Cambridge and winning honours in the university examinations. After leaving his school or the university the student joins a hospital fitted to spend the whole of his five years' curriculum in the pursuit of those advanced subjects comprised in a sound medical education. It is common experience that the subjects taught in the smaller forms possible in a public school are better remembered and more readily available for practical use than when the individual relation of teacher and taught is lost in the larger lecture theatres of the great medical schools.

Few teachers of experience will question the statement that the results of the teaching of scientific subjects are bound to be of little use and "practically *nil*" if those subjects are taught prematurely, before the mind has been fitted to grasp their first principles, by a course of training suited to early years, or if, again, a mass of crude facts is imparted where the intelligence has not been awakened or the ground properly prepared.

I am, Sirs, yours faithfully,

C. HOLMAN,
Nov. 27th, 1900. Treasurer of Epsom College.

"THE ALLEGED EXISTENCE OF A 'FOURTH DISEASE.'"

To the Editors of THE LANCET.

SIRS,—It is certainly surprising that the alleged discovery of a new zymotic disease by a medical man of repute—a disease, too, materially affecting the diagnosis of another disease so important, from a diagnostic point of view, as scarlet fever—has called forth so little comment from epidemiologists. If Dr. Clement Dukes has indeed discovered a new malady of the nature he claims, the discovery is a highly important one and deserves due recognition. If, on the other hand, as I maintain, he has only been describing under the name of a new disease three series of cases the first two of which were in reality rose-rash, and the last one scarlet fever, then it is most desirable that this should be demonstrated. Otherwise confusion will be worse confounded and numerous cases of indefinite but true scarlet fever are likely to be diagnosed as "fourth disease," to the detriment of the public and the discredit of our profession. This must be my excuse for again troubling you.

The main point upon which I join issue with Dr. Dukes is

as to the identity of the various epidemics which he describes. If I am right in believing that he is describing more than one disease, then Dr. Dukes's argument as to the mutual unprotectiveness of the supposed new disease with scarlet fever on the one hand and with rose-rash on the other crumbles away; indeed, his whole case may be said to do so, for it should be specially noted that he records *no single case* in which this double mutual unprotectiveness was present.

Now, what are the facts? The first series of cases, we are told, resembled rose rash and were diagnosed by Dr. Dukes himself as such. We are not vouchsafed any information as to the clinical features of this particular series, therefore it is reasonable to suppose that they resembled ordinary cases of rose-rash in appearance, had little or no pyrexia, little or no throat affection, and, most important of all, did not desquamate as we usually understand the term. The same remarks apply to those cases of the second series which were not complicated with scarlet fever. All these cases, I suggest, were really rose-rash. Now compare with these the third series (occurring in March, 1900). Here we are told that the temperature ranged up to 104·2° F., that the fauces were red and swollen, that the eruption so closely resembled scarlet fever that nine out of 10 experts could not have distinguished it, and that desquamation was profuse. These are the cases which, I suggest, were scarlet fever.

If the first series of cases at all resembled these last ones, it is surely pertinent to ask how Dr. Dukes could possibly have diagnosed them as rose-rash rather than as scarlet fever. Under all the circumstances and with the very incomplete particulars forthcoming, it appears to me quite unreasonable to expect us to believe that all the cases were one and the same disease; much less that that disease was a new and hitherto unrecognised one.

As regards Mr. R. Leslie Romer, who gives in THE LANCET of Nov. 17th (p. 1459) notes of a series of eight cases resembling scarlet fever but which he has now come to the conclusion were cases of "fourth disease," he says that the chief discrepancies between his cases and those of Dr. Dukes are (*a*) the different colour of the rash and (*b*) the fact that there was no coryza or any enlargement of the post-auricular glands. He appears to have overlooked the most important discrepancy of all—viz., that whilst none of his cases desquamated all those among Dr. Dukes's cases which resembled scarlet fever did so, some of them profusely. I would suggest, therefore, that Mr. Romer's cases were "fifth disease."—I am, Sirs, yours faithfully,

Burton-on-Trent, Nov. 20th, 1900. C. KILLICK MILLARD.

"THE TREATMENT OF MALARIA BY HOMŒOPATHIC MEASURES."

To the Editors of THE LANCET.

SIRS,—I thank you for your courtesy in sending me a copy of THE LANCET of Nov. 24th. Your doing so seems to imply that you expect from me some notice of your editorial referring to my paper before the Chamber of Commerce.[1] If you have sent one to Mr. Jones also perhaps he will be grateful for your unsolicited advice on his business matters, though I think I know him sufficiently well to be able to tell you that he will certainly, as you anticipate, "consider your view to be based upon narrow selfishness," and not only on narrow selfishness, but on wilful prejudice and blind bigotry. I am sure he will see through the sophistry of your assertion that "there is not such a thing as a qualified homœopathic medical man." He knows that such an assertion is a falsehood. He is also aware that you yourselves know very well that the expression "homœopathic medical man" means a medical man who practises homœopathicly; and that you know that the medical men who practise homœopathicly in this country are as legally qualified as you yourselves are. He also knows that it is not true that "medical men (*sic*) cannot work with homœopaths." It is well known to be a fact that consultations frequently take place between the best of the Liverpool traditional practitioners and the homœopathic practitioners of the city. You might have spared yourselves the snarling contrast between medical men and homœopaths, because it is too transparent for Liverpool merchants not to see through.

That the editors of an old medical journal should, at the end of the nineteenth century, assert that "homœopathy is based upon theories exactly contrary to medical knowledge" shows that medical editorial interests are stronger than the interests of truth. You ought to publish this reply; but, of course, in your editorial position you can refuse a reply to your wanton attack on homœopathy and your sophistical insinuations as to the status of medical men who practise homœopathicly, but if you do, there are other channels for exposing your unfairness.

I am, Sirs, yours faithfully,

Birkenhead, Nov. 24th, 1900. JOHN W. HAYWARD.

[1] THE LANCET, Nov. 24th, 1900, p. 1518.

*** The prevention and treatment of tropical disease are not Mr. A. L. Jones's business matters, though his generosity and energy are being excellently employed in assisting the interests of science. We repeat that "there is not such a thing as a qualified homœopathic medical man." There is no sophistry in our words. Homœopathic practitioners obtain their qualifications in medicine and surgery, and later become homœopaths. The insinuation that the qualifications upon which homœopaths have a place upon the Medical Register have been obtained by homœopathic work is more than a sophistry—it is a dishonest pretence. Mr. Parnell was a patriot according to his convictions, the idol of his followers, and the paramour of Mrs. O'Shea. But he was not the idol of his followers because he was the paramour of Mrs. O'Shea; and homœopaths are not on the Medical Register because of their therapeutic views. We do not know what a "traditional" practitioner is, but we shall be interested to receive proof that the leading medical men in Liverpool meet homœopaths in consultation. The exposure of our unfairness, as well as further correspondence on this subject generally, must be made in the "other channels" referred to; we can give no more space to the matter.—ED. L.

THE INCUBATION OF PLAGUE.

To the Editors of THE LANCET.

SIRS,—In connexion with the incubation period of plague the following case may be of interest. On Oct. 8th the senior warder at the Brisbane General Hospital assisted the Government medical officer at two post-mortem examinations of bodies subsequently proved to have died from plague. On the morning of Oct. 11th he complained of severe headache and had to leave his duties. On Oct. 12th it was proved both by clinical and bacteriological examination that the man was suffering from plague. He has several very painful buboes in the right axilla and numerous slight abrasions on his hands.

I am, Sirs, yours faithfully,

HAROLD J. HUTCHENS.
Medical Superintendent of the Plague Hospital.

Colmslie Hospital, Bulimba, Brisbane, Oct. 13th, 1900.

"THE USE OF TOBACCO ON ACTIVE SERVICE."

To the Editors of THE LANCET.

SIRS,—The annotation on the above subject which appeared in THE LANCET of Nov. 10th has attracted a considerable amount of attention. It seems to have been copied rather extensively by the daily press and has been freely and, for the most part, approvingly commented upon. Of course, in all matters relating to health the nation looks to the medical profession for advice and guidance. Now, as Lord Rosebery has recently said, the stability of a great empire like ours depends above all other things upon the health of the British people. It is, therefore, a matter of extreme importance that the advice which we give on this vitally important subject should be sound and unquestionable. This necessity is of all the greater importance in the case of those on whom the nation has to depend for its protection from its enemies.

It is owing to a sense of the serious responsibility involved that I venture to suggest that the writer of the annotation referred to, through a too hasty generalisation on the one hand and by overlooking more than one important fact on the other, has been led into serious error. He wishes your

readers to believe that the use of tobacco on active service is productive of important advantages. In support of this view he makes this rather sweeping declaration in regard to the war in South Africa. "Perhaps nothing that it has demonstrated has been more marked than the important part which tobacco plays in the soldier's existence." He declares that "there can be no doubt about the truth of it." Yet the sentence which follows this positive declaration furnishes one of the strongest reasons for doubting its truth. We are told that "the Duke of Wellington's armies had no tobacco worth speaking of. If they did not forbid its use, at any rate the Iron Duke's officers were directed to advise their men strongly against it." Now is it for a moment likely that in Spain, where tobacco was cheap and plentiful and therefore easily supplied, the Duke would have discontinued its use if he had not had reason to believe that the army would rather be injured than benefited by the use of tobacco? Surely in order to justify the positive declaration which he makes the writer ought to have produced facts which would place the matter beyond doubt or dispute. But this he fails to do; his declaration is based on the flimsy ground of mere hearsay. But if we do not get facts we get opinions. We are told that "it is difficult to believe that tobacco is anything but a real help to men who are suffering long labours and receiving little food, and probably the way in which it helps is by quieting cerebration, for no one doubts its sedative qualities, and thus allowing more easily sleep which is so all-important when semi-starvation has to be endured." To this it is sufficient to reply that where healthy men have undergone severe fatigue in the open-air they will speedily sink into profound repose, when the fitting time arrives, and opportunity serves, however scanty the diet may have been. Where little or no exercise has been taken there may be unquiet cerebration, and tobacco may act as a sedative, but so will a few drops of tinct. opii or liq. mur. morph. But nature's supply is better than is that of art. The worn and weary man, in Shakespeare's words, "enjoys the honey heavy dew of slumbers," and rises on the morrow, bright and buoyant, ready to face cheerfully the toil and privation he may have to meet. But the man who has meddlesomely tampered with nature's kindly process awakes imperfectly refreshed, he is depressed, and is some time before he can shake off his languor. He has in no way benefited by his smoking; "the pipe did not 'ease the way to sleep,' and the sleep of the non-smoker was not delayed by sheer bodily fatigue and mental restlessness caused by prolonged and monotonous exertion."

Now, there are certain circumstances which your annotator has overlooked which render "the use of tobacco" very undesirable "on active service." 1. No fact is better established than that smoking is detrimental to good shooting. The best shots at Bisley are almost invariably non-smokers. 2. It is in the hours of idleness that smoking is most indulged in, and in proportion as it is indulged in the craving for it grows, so that the use in the vast majority of cases leads to the abuse. 3. The fumes of burning tobacco dry and irritate the fauces, exciting thirst, hence smoking and drinking generally are associated; discipline is in this way often infracted, and punishment frequently follows. 4 The fewer and the simpler the soldier's wants the better for his own comfort. The use of tobacco produces in the majority of cases an imperious want, and when it cannot be met the soldier is in great distress and his depression unfits him for earnest work.

I am, Sirs, yours faithfully,

Manchester, Nov. 19th, 1900. R. MARTIN.

"THE ETIOLOGY OF SCARLET FEVER."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 27th there appears an open letter by Dr. Adolf Baginsky and Dr. Paul Sommerfeld supposedly in answer to an article published by me in THE LANCET of Sept. 29th. In this letter the above-mentioned gentlemen make the following statement: "Dr. Class must be ignorant of the customs of earnest Germans, and especially of our work, if he thinks that we wish to rob him of the merits of this investigation." I sincerely regret that Dr. Baginsky and Dr. Sommerfeld have misinterpreted my statements, as I did not have the slightest intention of accusing them of endeavouring to rob me of any credit, and am quite certain that if they had seen my contributions on the subject due credit would have been given by them. That they were not noticed shows, however, that Dr. Baginsky and Dr. Sommerfeld did not review American medical literature very carefully, as my work was published in the three leading American journals—namely, the *Journal of the American Medical Association*, the *Philadelphia Medicel Journal*, and the *New York Medical Record*. I fully realise that it is almost impossible to review the entire medical literature of every country before publishing an article, still I believe if European investigation, especially those of continental Europe, would occasionally peruse our leading medical journals no harm would result to them beyond finding that some recent discoveries have been ante-dated by Americans. Dr. Baginsky and Dr. Sommerfeld further state in their letter that a possible point of difference between their germ and that described by me is that theirs occurs both as a diplococcus as well as a streptococcus. I am afraid that the gentlemen overlooked part of my description, as the variability in form mentioned by them was also given in my article. Before closing I wish to state that I am pleased to note that so distinguished a physician as Dr. Baginsky, whose work in pediatrics is fully recognised in this country, should have obtained results so closely agreeing with my observations. As we both have the same end in view—namely, to dispel the mystery surrounding one of the chief scourges of childhood—I can only wish him success in his further investigations.

I am, Sirs, yours faithfully,

Chicago, Nov. 18th, 1900. W. J. CLASS, M.D.

ETIOLOGY OF RHEUMATIC FEVER.

To the Editors of THE LANCET.

SIRS,—May I refer to my advertisement in THE LANCET of Nov. 17th and say that I should like a few more specimens of blood from rheumatic fever cases? In all those sent me the micrococci are present in the blood. Perhaps other members of the profession will kindly send me specimens. I am very pleased to send the cover-glasses and pay 2*s.* 6*d.* for the trouble and postage, as I am desirous of having a large number of specimens from all parts of the kingdom.—I am, Sirs, yours faithfully,

The Hall, Southwick, Brighton, Nov. 22nd, 1900. E. F. GRÜN.

DEW-PONDS.

To the Editors of THE LANCET

SIRS,—Your annotation containing the result of experiments near the dew-ponds on the downs in THE LANCET of Oct. 13th is to me very interesting, inasmuch as the same condition appears to obtain in the Karoo veldt in the Cape Colony, and I can assure you one has plenty of time for contemplation amongst the scattered farms in the Karoo. The dams, as they are called, are quite shallow and yet retain water for long periods under a broiling sun, and this water serves for cattle, horses, goats, and Boers. I see no other explanation than that given by you.

I am, Sirs, yours faithfully,

Nov. 7th, 1900. BOER-BOK.

"ADJOURNED CORONERS' INQUESTS AND MEDICAL WITNESSES' FEES."

To the Editors of THE LANCET.

SIRS,—Section 22 of the Coroners Act, 1887, says:—

A legally qualified medical practitioner ..... shall be entitled to receive such remuneration as follows; that is to say, (*a*) for attending to give evidence at any inquest whereat no post-mortem examination has been made by such practitioner, one guinea; and (*b*) for making a post-mortem examination of the body of the deceased, with or without an analysis of the contents of the stomach or intestines, and for attending to give evidence thereon, two guineas.

The word which to my mind settles any dispute there may be as to the effect of these two subsections is the word "and" which connects them. If it had been intended that no more than two guineas should ever become payable the two subsections would have had the word "or" between them. Moreover, it cannot be argued that the evidence which the medical man would give under subsection (*b*) is covered by subsection (*a*), as the word "thereon" clearly refers to evidence which he is in a position to give after having made the post-mortem examination.

It seems clear to me that when a medical man is

summoned in the first place merely to give such evidence as he can from his observation of the deceased he comes under subsection (*a*), and if that proves insufficient and he is told to make a post-mortem examination he does so under subsection (*b*), for which he is entitled to a further two guineas, but not until he has given the evidence which he is now in possession of, as the last words of the subsection show: "and for attending to give evidence *thereon*." The space at my disposal in Messrs. Burroughs and Wellcome's Medical Diary precludes me from entering at all fully into these and similar questions, but if carefully studied I believe in most cases the information given is sufficiently accurate to enable anyone to apply the argument for themselves. The text in this particular instance is a good instance in point.

I am, Sirs, yours faithfully,

THE AUTHOR

of A Brief Abstract of the Laws particularly applicable to the Medical Profession in Messrs. Burroughs and Wellcome's Medical Diary.

Nov. 28th, 1900.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Government Resolution on the Report on Plague in Calcutta.—The Progress of the Epidemic.—The Health Officer's Report on Malaria in Bombay.

A GOVERNMENT resolution on the report on plague in Calcutta has just been published. It gives a brief *résumé* of the leading points in the report of the chairman and makes some pertinent comments on certain facts recorded. The history of plague in Calcutta is now very stale news, but whereas the official record dates the first outbreak from April, 1898, it seems very probable that the disease really existed in the city in 1896. It is recognised that the high general mortality in 1898 and in the first half of 1899 indicates a larger amount of plague than was shown by the official records. Just as in Bombay there is one ward which has stood pre-eminent for the number of its cases of plague. It is almost in the centre of the northern half of the town and its condition is most insanitary. Dr. W. J. Simpson described it "as unfit for habitation and a source of danger to the town. ..... The narrow ill-ventilated streets; the passages to which neither light nor fresh air have access; the filthy condition of both; the close proximity of the houses to one another and their over-crowded state combine to form conditions which render proper sanitation impossible. It is a standing menace to the rest of the city." The resolution refers to the various changes in plague policy which have from time to time been adopted, and says of the measures employed: "Of these the principal, in fact practically the only one, generally used in Calcutta has been disinfection." The difficulty of finding living cases of plague is drawn particular attention to, as very little help has been received from outside the plague department. In the second half of 1899 only 26 patients were seen alive, and while during the height of the outbreak in 1900 there were 1409 living cases seen out of 7897 reported, this absence of living cases is again noticeable since June 30th, 1900, and the resolution suggests, by certain quoted figures of mortality, that some 470 cases ending in recovery have escaped discovery and that a certain number of deaths really due to plague have escaped record as such. It seems impossible to avoid coming to the same conclusion. The wholesale or "extra-disinfections" are referred to with great confidence Up to Sept. 8th some 42,314 rooms have been subject to this "extra-disinfection." Since that date, I am informed, as many more have been treated, and that at the present time about 10,000 rooms are being disinfected every week. How far disinfection is efficacious in preventing the spread of plague is a question, therefore, to which the ensuing season will be likely to furnish an answer. The resolution implies that the result so far "is a decided if not conclusive preponderance of evidence that disinfection when carried out on as large a scale as possible is a useful and efficacious preventive agency." The Government has come to the conclusion that "disinfection is the only preventive measure which it is practicable to work on a large scale in Calcutta." With the exception of a paragraph referring solely to 1898 there is not a word mentioned about inoculation. The report concludes with an acknowledgment of the services rendered by the plague staff and by the few native gentlemen who have given some assistance.

It is evident that Calcutta has only had one serious outbreak of plague, as the estimated mortality for the two and a half years' period of the visitation only amounts to 13,000, of which 10,000 occurred this year.

For the whole of India there has been a slight decline in the number of deaths due to plague. For the week ending Nov. 3rd 2148 deaths were returned, as compared with 2174 for the previous seven days. In the Bombay Presidency there were 1123 deaths; in the Bengal Presidency, 278; and in the Mysore State, 737. The official returns for Calcutta show almost a blank, but I am informed that the apparent extinction is due to a different method of making the returns. A considerable number of suspicious deaths which were formerly included in the totals are now omitted. In Bombay city the disease is still smouldering. In Poona there is a decline, the deaths having fallen to less than 50 a day.

According to the health officer's report, investigations have been made in Bombay upon the localities in which the anopheles mosquito can be detected. More or less every part of the city and the island shows its existence, but it has been singled out especially at Malabar Hill; in the ravine on the west side of the reservoir and in the storm-water channel; in the pools on the Chowpaty estate on the east of Malabar Hill; in the Wellington and Floral fountains of the fort; and in the Bandora slaughter-houses and the Victoria Garden fountains. Malaria is said to have been more prevalent during the past few weeks. It is noted that in one compound on Malabar Hill nearly all the servants had malaria in some form or other, while the residents of the bungalow were free. Whether malaria has been more frequent of late or not is uncertain, but since the cholera outbreak subsided there has been little indication of decline in the general mortality. This shows a slight improvement during the past week, it is true, but the death-rate continues inordinately high. The excess mortality remains unexplained.

Nov. 8th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Epidemic of Poisoning by Beer.

THE existence of what has been called the "Manchester epidemic" is by this time widely known, as it has been very generally noticed in the papers. For some months past cases of what were generally considered to be alcoholic peripheral neuritis have occurred with remarkable frequency. Dr. E. S. Reynolds has seen great numbers at the workhouse hospital at Crumpsall and also at the Royal Infirmary, and he was one of the first to recognise the fact that they differed in some ways from typical cases of peripheral neuritis due solely to alcohol. Many others have noted the unusual prevalence of these cases in different parts of the city and surrounding district. One characteristic has been the frequent pigmentation of the skin, and in commenting on a case to the students at the infirmary Dr. J. Dreschfeld discussed the possibility of its being connected with arsenic. Dr. T. N. Kelynack has been observing these supposed cases of alcoholic poisoning for some time at the Pendleton branch of the Salford Royal Hospital and also at the Manchester Infirmary, and for the greater part of last week he was making investigations as to their cause in conjunction with Dr. R. Forsyth, medical officer to a large firm of brewers, and Mr. Kirkby, F.L.S., of the Pharmaceutical Department of Owens College. Arsenic was found by them in the beer, not from one, but from several breweries, confirming the results obtained by Dr. Reynolds and also by Professor Dixon Mann. Mr. C. H. Tattersall has also been making researches into the matter, and has sent various samples of beer to Professor Sheridan Delépine who found arsenic in them in considerable quantity. There seems to be no doubt that the source of the arsenic was the crude sulphuric acid used in the production of "invert" sugar supplied to certain manufacturers of cheap beer.

Manchester and Salford Sanitary Association.

At the meeting of the committee of the Manchester and Salford Sanitary Association held on Nov. 21st Professor Dixon Mann in the chair, Dr. F. J. H. Coutts was appointed

medical honorary secretary in place of Dr. R. T. Williamson, resigned. At the request of the committee Mr. William Thomson undertook an investigation into the subject of lead-poisoning. He also presented a supplementary report on the recent cases of lamp explosion in Manchester and Salford He described the burners of the lamps and the flash-point of the oils used in them, five of the latter being of the Russian type and one of the American type "There had not yet been traced any explosion with an oil having a flash at or above 100° F." (?) The American type of oils, he explained, were those having flash-points between 73° and 79°, the Russian had the flash-point lying between 84° and 89°, while in the Scotch type it was at or above 100°, but that a certain American oil had also a flash-point of 100° or upwards.

The Lewis Epileptic Colony.

The David Lewis trustees have given nearly £100,000 for the establishment of an epileptic colony in Cheshire. A site has been obtained at Warford, between Knutsford and Chelford, where about 400 acres have been purchased. The patients will live in detached two-storey buildings, accommodating 20 or 24 inmates. The whole equipment, including an infirmary, recreation hall, administrative block, &c., will be on a liberal scale. Most of the food will be grown on the farm, and healthy occupation will be found for the patients.

Nov. 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Dinner to the Edinburgh South African Hospital Staff.

ON the evening of Nov. 23rd the members of the Edinburgh and East of Scotland Hospital staff were entertained to dinner in the Imperial Hotel by the Edinburgh Company of the Volunteer Medical Staff Corps. Surgeon-Captain Hepburn presided, and he was supported by Colonel Rooney, R.A.M.C., principal medical officer for Scotland; Surgeon-Captain Wallace, who was in charge of the hospital at Norval's Pont; Captain M'Intyre, and Mr. Hepburn. After the toast of "The Queen and Royal Family" had been honoured the chairman proposed "The Navy, Army, and Reserve Forces," and Colonel Rooney replied. The toast of "The Edinburgh South African Hospital" was then given by the chairman and was acknowledged by Mr. Wallace. Captain Erskine subsequently proposed the toast of "The Edinburgh Company." The members of the hospital staff have returned in good health, looking all the better for their South African experiences.

Edinburgh Royal Infirmary.

At a meeting of the managers of the Edinburgh Royal Infirmary on Nov. 19th the board, on the motion of Sir Andrew Macdonald, resolved to communicate with the Members of Parliament for the city, the county, and Leith, asking them to do all they could to support the Bill for exempting hospitals from local taxation. The infirmary at present pays £300 in taxes.

Pharmaceutical Society of Great Britain.

The first evening meeting of the North British Branch of the Pharmaceutical Society of Great Britain was held on Nov. 23rd. Professor J. Arthur Thomson, Aberdeen University, gave the inaugural sessional address on "Medical Aspects of Natural History."

University of Edinburgh Preliminary Examination.

At the October preliminary examination in the Faculty of Medicine of the University of Edinburgh 128 candidates appeared for examination, of whom 13 were women. A large number of first-year students, however, are exempted from the preliminary examination by holding leaving certificates. The total number of first-year students of medicine, including extra-academical graduation women students, is 248.

St. Andrews Ambulance Association.

The annual meeting of the subscribers to the Edinburgh branch of the St. Andrews Ambulance Association was held on Nov. 22nd. In moving the adoption of the report Dr. P. A. Young, who presided, referred to the loss sustained by the association in the death of Professor Armstrong. Referring to the work of the past year, he said that the most important work had been the establishment and maintenance in South Africa of the Scottish National Red Cross Hospital. Between £40,000 and £50,000 had been subscribed for this scheme, and a hospital of 500 beds had been sent out which had won great praise from military men in South Africa. With regard to the ordinary work of the association, it was worthy of notice that there had been a great increase in the number of removals by the wagons of the association. In the past year there had been an increase of 254 removals over the preceding year. He hoped that there would be an increase of contributions to enable them to keep up their work on the present scale.

Death of Deputy Surgeon-General Mackay.

Deputy Surgeon General George Mackay, M.D. Edin., J.P., died at his residence in Edinburgh on Nov. 20th. Deceased was the eldest son of the late Major Donald Mackay, of the 70th Foot and grandson of Colonel George Mackay, of Boghouse, Sutherlandshire. He was born in 1820 and in 1841 took the degree of M.D. at the University of Edinburgh, when he also became a Licentiate of the Royal College of Surgeons of Edinburgh. In 1842 he received a commission in the medical department of the Honourable East India Company's service. He took part in the operations against the Mahrattas in 1844. He was in active service in Burmah in 1852 and received the medal and clasp for Pegu. After the war he returned to Madras and officiated as civil surgeon, first at Coimbatore and later at Ootacamund. In 1854 he was promoted to the rank of surgeon-major and was transferred to the Military Finance Department as examiner of medical accounts. Subsequently to this he became secretary to the Madras Medical Fund and the Military Fund. He retired from the service in 1875. He is survived by his widow, three sons and three daughters.

New Veterinary College.

Professor W. Owen Williams has succeeded his father as principal of the New Veterinary College, Edinburgh.

University of Aberdeen.

All the property needed for the erection of the new Greyfriars Church having now been acquired, Mr. A. Marshall Mackenzie, A.R.S.A., Aberdeen, has been appointed to prepare plans for the new building, and it is understood that an ornate front for Marischal College extension is being kept in view in prospect of the removal of the old church and other buildings in the Broad-street front.—The University Court have declined to make any alteration in the arrangement as to matriculation fees.—The Students' Representative Council has received a letter from Mr. J. E. Crombie, Lord Rector's assessor at the University Court, promising to further the erection of a gymnasium for the University.

Aberdeen Royal Infirmary.

Dr. Robert John Garden having resigned his post as senior surgeon Dr. John Marnoch has been appointed one of the the surgeons, and applicants for the vacancy in the assistant surgeonship caused by Dr. Marnoch's promotion will be advertised for. The employés of the municipal corporation still refuse to contribute systematically to the infirmary, but another effort is to be made to get them to reconsider their position.

Nov. 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Banquet at the Royal College of Surgeons in Ireland.

THE welcome-home dinner given by the Royal College of Surgeons in Ireland to the medical staff of the Irish Hospital recently returned from South Africa took place on Nov. 24th and was a very great success. Between the Fellows of the College and their guests about 150 were present, including his Excellency the Lord Lieutenant of Ireland, the Lord Chancellor of Ireland, the Right Hon. G. Wyndham, M.P., Chief Secretary for Ireland, Lord Iveagh, M.P., the Right Hon. the Attorney-General, M.P., and Lord Plunket. The President of the College, Dr. Thomas Myles, occupied the chair, and after the health of Her Majesty the Queen was duly honoured he mentioned that His Royal Highness the Duke of Connaught had authorised him to state that he much regretted to find that he was unable to attend on account of another engagement. Lord Cadogan, though still suffering from the effects of his recent accident and obliged to walk with the assistance of two sticks, delivered a most

interesting and admirable speech after he had read with dramatic effect a telegram of congratulation and of welcome to Sir William Thomson and his staff from Her Majesty the Queen.

Death of Dr. Francis J. B. Quinlan.

A brief notice appeared in THE LANCET of Nov. 17th, p. 1465, of the death of Dr. Francis J. B. Quinlan, who was known for many years in Dublin as physician, medical teacher, examiner, and professor. His funeral, which took place on Nov. 12th, was largely attended by his brother Fellows of the Royal College of Physicians of Ireland and by a representative gathering of the medical profession generally. Some 15 years ago he was much engaged in private practice, but being from the money point of view independent he gradually gave up the occupation of a popular physician in order to devote all his energies to the teaching of his favourite subjects—materia medica and therapeutics. Since the foundation of the Royal University of Ireland he was the Dublin examiner in those subjects there, while he also held for years the post of examiner for the Conjoint Board of the Royal College of Physicians of Ireland and of the Royal College of Surgeons in Ireland. He was, in point of fact, for years the most eminent and widely known teacher in Ireland in the subject which he had made his own. For the last quarter of a century he filled the office of professor of materia medica at the Catholic University Medical School, while to all students of that school, as well as to those of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland, and also to those of the Royal University of Ireland he was well known as an examiner. From his position as a professor and teacher during so many years his personality was familiar to crowds of students of medicine now in practice and to readers of THE LANCET all over the world. They will recognise the void which his rather sudden death has left in the ranks of the lecturing and teaching medical professors of Dublin. Like his father, who was a well-known citizen of Dublin and editor of a daily journal Dr. Quinlan possessed much literary ability and he frequently contributed admirable articles on Public Health and Hygiene to the *Irish Times* as well as to the medical journals. Although he was a prominent professor in the medical school of the Catholic University, Dr. Quinlan was always in politics a strong Unionist, a consistent Conservative, and an active member of the Senate of the University of Dublin. He had passed his seventh decade, but up to the last few weeks was a most energetic and effective lecturer and teacher. His rather sudden breakdown in health and subsequent death was thus a disagreeable surprise to his wide circle of friends.

Nov. 23th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Mercantile Marine Medical Officers.

A DISPUTE arose recently between the medical officers of the mercantile marine and the head of the Sanitary Department of Marseilles. The former are employed by the great steamboat companies and travel on their boats; the Sanitary Department is an official body connected with the Public Health Department and consequently is under the Minister of the Interior. The ships' medical officers have charge of the passengers and crew and attend them when they are ill during the voyage. They must also on the arrival of a ship in port hand in a statement as to the health of the ship. None the less, however, the port medical officer makes an official visit and he alone decides as to what, if any, measures of disinfection have to be taken with regard to passengers, crew, cargo, or boat. This independence of the two services is absolutely necessary, for the ship's medical officer, who is in the employ of the company, is liable to lose his place if he shows himself too severe or inflicts losses on the company by keeping the ship at a loss in quarantine. On the other hand, the port medical officer, whose duty it is to inspect steamers, often carrying from 700 to 800 souls, is very wide awake to the enormous responsibility which devolves upon him if he lets pass one single case which may become the focus of an epidemic, and is consequently liable to be over-exacting. Hence arises friction which recently culminated in actual conflict. The Maritime Medical Society at a recent meeting passed a resolution, which was published in the press, that its members had decided to have nothing more to do with the port sanitary authorities at Marseilles and they also protested against the little regard shown to themselves by the sanitary authorities who looked upon them with suspicion. They also protested against the very insufficient measures of disinfection which are taken at the sanitary station of Frioul in the case of ships coming from infected ports. They instanced the case of a steamer from Senegal, one of the officers of which, who had been confined in the sanitary station at Frioul, escaped during the night with the complicity of the sentry and was out for several hours. This protestation, which is somewhat contradictory in that at the same time it complains of over-strictness as regards certificates and of laxity as regards the disinfection of ships, has called forth an answer in the form of a letter from the chief of the Sanitary Department to the Minister of the Interior, but it seems likely that matters will quiet down. Certainly the port sanitary authorities should pay every attention to the certificates given by ships' medical officers; but, on the other hand, there have been too many instances in which these officers have shown regrettable laxity in the interests of their company, from fear of losing their posts. The remedy would seem to be that the ships' medical officers should be independent of the companies in whose service they are and should be appointed by the State, as are the inspectors of sugar refineries, petroleum distilleries, and other industrial establishments which inspectors have to watch in the interests of the public purse, but where, nevertheless, the owners have to pay the inspectors.

Military Service for Medical Students.

The position of medical students in France from the point of view of military service has for a long time past given rise to criticism. Formerly, when the "voluntary year" of service existed they did very well on the whole. They were allowed, on payment of 1500 francs, to serve for only one year instead of for five years, as all other classes of Frenchmen between the ages of 20 and 25 years had to do except in a few cases, such as the son of a widow. Between the ages of 25 and 45 years they were enrolled, as all other soldiers, in the army of the reserve, and after that in the territorial army, which is never called up except in case of war, save only for the manœuvres. As for the year passed in barracks medical students were, as a rule, if they wished it, attached to a regiment of hospital orderlies as simple privates. In the army of the reserve and in the territorial army they ranked as assistant surgeons (*médecins auxiliaires*)—that is to say, as non-commissioned officers, and once they had taken the degree of doctor they ranked as *médecins aides-majors*—namely, as officers, and in the event of war had to do the same work as regular military surgeons. Under these conditions it was only to be expected that the year passed in barracks would have been devoted to instructing the student in the work which he might have to do as a *médecin aide-major*, including besides purely professional and administrative details such as the organisation of hospitals. What happened, however, was the exact contrary. The student received no instruction on these matters, but was treated as an ordinary private, no difference being made between him and a peasant who was probably destined to be never anything more than a simple orderly. When, moreover, men had to be chosen from among these orderlies for work in military hospitals the ordinary private was always chosen in preference to the medical student, who was kept at work in the barracks sweeping out courtyards, washing vegetables, or being employed on sentry-go and picket duty. The majority of medical men in Paris at the present time have passed through a "voluntary year" of this kind. The fact, however, is capable of explanation up to a certain point, for it was necessary that orderlies should have some instruction in their duties, however humble, as regards the sick, for the medical student during war-time would not be acting as an orderly but as a surgeon. But the medical student should certainly have been instructed during his year of service in his possible future duties as regards ambulance work and the like. This instruction was only given during the period of the manœuvres, which lasted too short a time to make the instruction really of use. The recruiting law of 1889 brought no real change. True, the "voluntary year" was abolished and the term of compulsory service was reduced from five years to three; medical students in common with those of other liberal professions passed only one year in barracks, but they had to be fully qualified by the age of 26 years. If they were not, they had to complete the remaining two years of military service, so that the only way in which the medical student benefited by the law

of 1889 was that he no longer had to pay the 1500 francs for the privilege of only serving one year. As to his work during this year the most diverse regulations existed in different regiments. Some students were attached to an orderly regiment and kept at work in barracks, some passed six months as hospital orderlies and some were attached to an ordinary regiment and were treated exactly like ordinary privates. In what way the student was employed rested very much with the colonel of the regiment. To remedy these defects two propositions have just been laid before the Chamber—one by M. Lachaud, providing that all medical students should be considered as real *médecins auxiliaires* from the time of their joining the regiment after a very short course of military instruction. The other, presented by M. Astier, goes further and suggests that service for one year should be done away with, for he considers, with a certain amount of reason, that to this is due the overplus of medical men. For the one year's service instead of three attracts a great number of young men to enter the medical profession. The Government has, however, issued a decree which closely approaches the proposal formulated by M. Lachaud. Medical students will continue to put in only one year of military service, but after six weeks' military instruction they will be employed as *médecins auxiliaires*. This solution of the difficulty, which is generally regarded as satisfactory, is partly owing to the fact that the army is very short of medical men. The authorities do not want to increase the number at present on account of expense, neither do the present military surgeons want their numbers increased, for promotion is slow enough as it is. However, the new regulation pleases nearly everyone. The number of *médecins militaires* will be greatly increased even on a peace footing without extra expense, and the students will still have to serve only one year, and that under more agreeable circumstances than formerly, and will receive more thorough instruction as to their possible duties in time of war. There is one defect in the regulation and that is that no mention is made as to when in his medical course the student is to serve his year. Most students will certainly try to get it over as soon as possible—that is to say, at the beginning of their medical course. They will therefore give their military service at a time when they have had practically no medical instruction whatever and so will be of very little use. It would have been much better if the year of service had been made compulsory at the end of the medical curriculum when the student could have rendered service both to the army and to his profession. The young medical man should certainly be sent for his year to a provincial garrison, and thus the overcrowding of the great centres with medical men would be avoided.

Obituary.

The death of Professor Ollier at Lyons is announced. He was in his seventieth year and was professor of clinical surgery at the Faculty of Lyons, a corresponding member of the Institute, and Commander of the Legion of Honour. He was well known by his work on resections of bones and joints. It was he who attended President Carnot after he received the knife-blow which proved fatal. Professor Ollier was made honorary Fellow of the Royal College of Surgeons of England at the recent centenary.

Nov. 27th.

Obituary.

RICHARD NEALE, M.D. LOND., M.R.C.S. ENG., L.S.A.

DR. RICHARD NEALE, who died on Nov. 22nd at the age of 73 years, was a great benefactor to the medical profession by reason of his having inaugurated and conducted the well-known "Medical Digest." He received his medical education at University College Hospital. He took an interest in the purification of air by chemical means and was the inventor of an apparatus which he wished to be tried upon the Underground Railway for this purpose. The apparatus was described in THE LANCET of August 1st (p. 301) and 8th (p. 359), 1880, but we do not think that it ever came into practical use. Dr. Neale's life-work, however, was the "Medical Digest," a work of incomparable usefulness. The latest edition contains references to the most important British medical periodicals from 1840 to the beginning of 1899. We can say for ourselves that we have rarely, if ever, known the "Digest" to fail in giving the information which we have sought in its pages, and our frequent quotations from it for the benefit of our readers show its worth. We have often wondered why correspondents write to us asking us questions, the exact answers to which will be found in so well-known a volume. In an out-of-the-way part of the country we can understand the practitioner deciding that the possession of an index to literature which he cannot consult is of no practical use to him; but where files and bound volumes of all good medical periodicals can be perused—as obtains in every big town in the land—no medical man will regret the purchase of a "Digest." Armed with it he is master of all possible information on medical periodical literature. Although the price of the book (25*s.* 6*d.*) seemed high Dr. Neale made nothing by its sale, and yet he worked at it for four hours a day during 50 years. In recognition of his unselfish labours a testimonial was set on foot, being the outcome of an appeal signed by leading members of the profession which appeared in THE LANCET of Feb. 10th, 1900 (p. 420), and a list of subscriptions received appeared in THE LANCET of May 5th last, (p. 1335). It is most earnestly to be hoped that some one will be found who will take up the work which Dr. Neale can no longer carry on, for it would be a thousand pities if such a useful compilation were to come to an end.

JOSEPH MORTIMER GRANVILLE, M.D. ST. AND., M.R.C.P. LOND., M.R.C.S. ENG.

WE regret to have to record the death of Dr. Joseph Mortimer Granville which took place on Nov. 23rd at 7, Queen Anne-street, Cavendish-square. Dr. Mortimer Granville was 67 years of age at the time of his decease. He was at one time associated—in the capacity of editor, we believe—with the *Globe* and subsequently was connected with this journal, having been many years ago a member of the staff of THE LANCET. Dr. Mortimer Granville had many marked qualifications as a journalist which had been cultivated and developed by much literary work in that capacity. He was a voluminous reader and had an alert and retentive memory. He possessed an easy and facile style and considerable power of rapid and varied composition. Combined with this he had a fresh and novel way of viewing a great variety of subjects which came within his purview. He was rather to be regarded as a conversationalist with a pen in his hand than as a patient, clear, and accurate thinker, but if his mental promptitude was occasionally wont to capture his judgment he was, nevertheless, often able to prick his readers' ears with an apparent paradox or impart some fresh and suggestive view to their minds. It was more particularly in writing upon current events of a socio-medical, clinical, or mixed character and of a more or less ephemeral interest, where he could rapidly focus the results of his previous reading or those derived from an unconscious exercise of memory, and mingle them with his own ideas, that Dr. Mortimer Granville was at his journalistic best. We do not think that, notwithstanding his undoubted ability, his friends and admirers would claim for him that he was to be ranked as a scientific type of worker. Having ceased connexion with this journal he continued to practise in London as a physician and wrote much on various subjects of a more or less professional character, especially in regard to gout, on which, it is needless to add, he entertained very different views to those held by medical authorities generally. He published various small treatises of a popular sort which displayed his talent for shrewd, if superficial, observation. Among these may be mentioned "Minds and Moods," "Sleep and Sleeplessness," "The Secret of a Clear Head," and "The Secret of a Good Memory," all of which were designed to popularise knowledge of common psychological phenomena. His interest in mental problems was undoubtedly stimulated by work which he had done in our columns when making as our Commissioner certain inquiries into the care of the insane. The results of the investigations which he then undertook were afterwards published under his name with the title "The Care and Cure of the Insane," and they constitute his only work upon mental disease and allied subjects having any pretence to scientific scope. He also wrote largely upon gout, and invented various small instruments, such as surface and differential thermometers, designed for medical use. Dr. Mortimer Granville became M.R.C.S. Eng. in 1856, M.D.

St. And. in 1876, and M.R.C.P. Lond. in 1883, and was a member of several societies.

ROGER EDWARDS, M.D. DURH., L.R.C.P. LOND., M.R.C.S. ENG.

DR. ROGER EDWARDS died at his residence, Colwyn Bay, North Wales, on Nov. 21st, in his fifty-first year. Dr. Edwards, who was born at Dolgelly, received his medical education at University College Hospital, London, and qualified L.R.C.P. Lond. and M.R.C.S. Eng. in 1875 and in 1896 he graduated M.D. of Durham University. After holding resident appointments at University College Hospital and the Royal Free Hospital Dr. Edwards settled at Llanfyllin, Montgomeryshire, where he soon established an extensive practice. The deceased was formerly medical officer of health for the Bala Urban District Council. He took a great interest in municipal matters and was several times re-elected mayor of Llanfyllin. Dr. Edwards was also a member of the Montgomeryshire County Council and chairman of the county governing body.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Edward R. Squibb, a well-known pharmacologist. He had in early life been in medical practice. His "Ephemeris of Materia Medica" is well known.—Dr. Karl Georg Gaedeken, Professor of Medicine, Hygiene, and Mental Diseases in the University of Copenhagen.—Dr. Hugo Bergeat, a well-known Munich laryngologist.—Dr. George Stetter, Professor in the University of Königsberg. He was chiefly known by his writings on fractures and dislocations. He was 52 years of age.—Dr. Antonio Ferreira França, formerly Professor of External Pathology in the University of Rio de Janeiro.—Dr. Moses White, formerly Professor of Pathological Anatomy in Yale.—Dr. F. Acconci, Professor of Gynæcology in the Medical School of Genoa.

THE ANNUAL DINNER OF THE BRISTOL MEDICAL STUDENTS.—On Nov. 22nd, the Bristol medical students held their annual dinner under the presidency of Dr. Shingleton Smith, at which Sir William Broadbent was the guest of the evening. About 110 gentlemen were present, including for the most part past and present students and local practitioners. After dinner the president proposed the first toast, that of "The Queen and Royal Family," and reminded his hearers that it was only just over a year since Her Majesty had so graciously come down to open the Bristol Convalescent Home. After a verse of "God save the Queen" the guest's health was drunk with musical honours. Sir William Broadbent responded in a few words. Mr. C. E. S. Flemming then proposed "The Army, Navy, and Auxiliary Forces," and Surgeon-Major D. S. Davies replied. Sir William Broadbent then rose to propose the "Health of the Bristol Medical School" and said that he felt that the chief right he had in proposing this toast was that he felt so much sympathy with it and that he wished well for the school. He had constantly heard of the Bristol Medical School throughout his life, and he thought that its incorporation with University College was but a stepping-stone to a Bristol University. He said he thought that the clinical practices of the Bristol Royal Infirmary, the Bristol General Hospital, the Eye Hospital, and the Children's Hospital, which were all open to students, combined to form a field for clinical work and observation which would make such an institution a formidable competitor in the teaching world of medicine and might even, he thought, attract students from London. In conclusion, he said that he wished success to the faculty, to the students, and to the medical school. Dr. Markham Skerritt, who replied for the Bristol Medical School, said that he hoped in regard to a university that they would follow in the steps of the inhabitants of Birmingham, who had taken time by the forelock and had constituted their university at a time when a race had not arisen which "knew not Joseph." He thanked Sir William Broadbent for coming among them and speaking in such kind terms of University College. Dr. A. Ogilvy then proposed the toast of the "Past and Present Students" and Dr. Weatherly and Mr. Corfield replied. This was followed by the toast of "The President," proposed by Dr. Doyne, and to this Dr. Shingleton Smith replied. The toasts were interspersed with music and songs, and on the whole this was one of the most successful dinners that has yet taken place.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THE seventieth session of the General Council of Medical Education and Registration was opened on Tuesday, Nov. 27th, the President, Sir William Turner, being in the chair. The programme of this session, it was expected, would be got through by Saturday (to-day), and there are financial reasons for curtailing the sessions of the Council. This forecast, however, is already discredited, for the Council has fixed the hearing of a very important case of a disciplinary character for Monday, Dec. 3rd. It looks as if the adjustment of the expenditure and income of the Council will have to be secured by other means than by reduction in the number of days of the sessions.

The members of the Council arrived in due time and in full force, including Sir William Thomson of Dublin, to whose services in South Africa the President made an eloquent allusion which was heartily cheered by the Council. The three new members—Professor B. C. A. Windle, representing the University of Birmingham; Professor Charles Bent Ball, the Royal College of Surgeons in Ireland; and Professor Alfred Harry Young, the Council of the Victoria University—were duly introduced. The resignation of Sir Philip Smyly created a vacancy in the Executive Committee to fill which the Council elected Sir Christopher Nixon.

The address of the President consisted largely of highly appreciative notices of the late Sir Henry Acland, Dr. Dennis Embleton, and Professor D. J. Leech. The two former were among the original members of the Council; and few members have been more regretted than Professor Leech, whose services, especially in the matter of the Pharmacopœia, were most valuable. Sir William Turner touched with much judgment and good taste on the thorny subject of the right of the Council to "approve" the institutions, schools especially, whose examinations in chemistry, physics, and biology are accepted by the Royal Colleges of England, and drew forth the applause of the Council when he expressed the hope that differences between the Colleges and the Council would be settled without a breach of that good understanding which had done so much for medical education in the past.

A highly interesting communication transmitted from the Foreign Office was read from Mr. William Wyndham, Her Britannic Majesty's Consul at Chicago, with reference to a bogus diploma mill in that city. Mr. Wyndham stated that an Englishman named Allan Fisher is selling in England the medical degrees of the People's Institute, an association which has been raided by the Chicago police as fraudulent. Mr. Wyndham gave the names of certain persons known to have purchased these sham medical degrees, and we are glad to believe none of the persons are on the Medical Register.

The proceedings on Wednesday afternoon formed an illustration of a way that the Council has of raising again and again the same question, and of devoting hours to the discussion of it, only to arrive at an infinitesimal change of result in no way justifying the expenditure of the Council's time and money. If there was one thing which the Council had discussed thoroughly, it was the question of the curriculum and the examinations for diplomas of Public Health. The subject was dealt with by Sir John Simon before he left the Council, and his voice was most influential in such matters. His interest in that subject was great for two reasons—first, the

intrinsic importance of it; and, secondly, and more particularly, because the Medical Act of 1886 had given to the General Medical Council much responsibility in the matter, providing that the registration of any diploma in sanitary science shall be dependent on the discretion of the Council. But two years ago Sir William Gairdner called attention to apparent diversities of interpretation of the Council's regulations concerning diplomas in Public Health that prevailed in different localities, with the result that the Public Health Committee was instructed to inquire into the matter. This committee presented on Wednesday a lengthy report, to which we refer our readers. Sir John Batty Tuke moved, as an amendment to the formal motion of Mr. Teale that his committee's report should be received and entered on the minutes, that the report be re-committed, on the ground that the Council, if it followed the recommendation of the committee, would be lowering the status of the diplomas. The amendment was lost and the report was debated at length by the Council in committee without any appreciable alteration being effected in existing regulations.

TUESDAY, NOV. 27TH.

The seventieth session of the General Council of Medical Education and Registration was opened to-day, the place of meeting being the hall of the Council in Oxford-street, London. The President, Sir WILLIAM TURNER, occupied the chair.

Introduction of New Members.

This was the first business of the session. There were three Members to introduce. Dr. MacAlister introduced Dr. Bertram C. A. Windle, the first representative of the University of Birmingham; Dr. Bennett introduced Dr. Charles Bent Ball, the successor of Sir Philip Smyly in the representation of the Royal College of Surgeons in Ireland; and Sir Dyce Duckworth introduced Professor Alfred Harry Young, who succeeds the late Dr. Leech in the representation of the Victoria University.

Presidential Address.

The PRESIDENT then delivered his address.

The Deaths of Sir Henry Acland, Dr. Leech, and Dr. Embleton.

The PRESIDENT said that he would be wanting in respect to the memory of one of the most eminent of his predecessors if he were to open the present session without referring to the death, a little more than a month ago, of one who for 13 years occupied the presidential chair of that Council. Sir Henry W. Acland was chosen by the University of Oxford as its representative when the Council was formed in 1858, and he and Dr. Dennis Embleton, whose death was announced a few days ago, were the last of the eminent men who constituted the first Council of Medical Education and Registration. At Oxford Sir Henry Acland was prominent in the establishment of the museum as a great centre of scientific training, in the extension of the Professoriate, and in the encouragement of scientific studies as avenues to obtaining degrees in Arts and Medicine. During 29 years he sat in this Council as one of its members. Dignified in presence, courteous in manner, graceful in speech, he brought to bear on the consideration of their business a cultivated and reflective mind. His life and environment led him fully to appreciate the position of medicine as one of the learned professions, and that the special technical training necessary for its efficient practice should be based on a sound general and scientific education. His academic and social position and the innate nobility of his nature had from an early period of his life gained for him the friendship and confidence of the leaders of the medical profession, of statesmen of both parties, and others eminent in public life, and contributed in no small measure to insure the Council's harmonious relations with the departments of Government with which it was officially brought into communication. To the late Dr. Leech the Council was greatly indebted for skilful guidance in the preparation of the last edition of the Pharmacopœia, and of the Indian and Colonial supplement, with the latter of which he was engaged almost to the end. Dr. Leech had bequeathed to the Council for its library a valuable collection of Pharmacopœias and other volumes bearing on his special subject. The Victoria University had chosen as his successor Professor A. H. Young, M.B. Edin., of the Owens College. Sir Philip Smyly had resigned his seat as the representative of the Royal College of Surgeons in Ireland and the College had elected Dr. Charles Bent Ball.

University of Birmingham.

"On May 25th of this year," the President continued, "an Act passed the Legislature granting to the University of Birmingham, which had been established by Royal Charter on March 24th, the power to hold qualifying examinations in medicine, surgery, and midwifery, for the purpose of registration under the Medical Acts, as if it had been a University in the United Kingdom legally qualified at the date of the Medical Act, 1886, to grant diplomas in medicine and surgery. The Council of the University also became entitled to choose one representative to be a member of the General Medical Council as if that University had been included in Section 7 of the Medical Act, 1886. On June 20th of this year I received official intimation of the passing of the Act and requested the Registrar, as soon as copies could be obtained, to forward one to each member of the Council. Section 2 provided that the Act was to come into operation on Oct. 1st, and on Oct. 4th the Vice-Chancellor intimated that Dr. Bertram C. A. Windle had been chosen as the representative of the University of Birmingham. This Act of the Legislature has given an additional member to the Council, and in choosing Dr. Windle the University has selected a member who has long been engaged in medical education, on the details of which he can speak from personal knowledge and experience.

Bills in Parliament.

During the last session of Parliament three Bills were before the House of Commons on subjects in which the Council was interested. A Bill for obtaining additional penal and disciplinary powers over registered medical practitioners was read a first time, but as it was introduced late in the session it made no progress. I propose to make arrangements for the introduction of the Bill as soon as Parliament meets for the transaction of general business. In the Companies Acts Amendment Bill Clause 3 made it unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife. The Bill passed the second reading and subsequent stages, but the clause appertaining to the medical profession was struck out in the committee of the House of Commons. The Midwives Bill, to the consideration of which the Council had devoted much attention and which was partially debated in the Commons, became a dropped measure.

The Royal Colleges of Physicians and Surgeons in London.

On the last day of the May session I undertook to obtain the opinion of our legal advisers on the legal questions raised in the report of the Education Committee on the subject in dispute between the Council and the Royal Colleges of Physicians and Surgeons in London, and the representatives of those Colleges promised to endeavour to obtain certain additional information bearing on the question. Through these gentlemen and the courtesy of the President of the Royal College of Physicians the opportunity was given to me to bring the case, drawn on behalf of that College, and the opinion of their counsel thereon, before Mr. Muir Mackenzie, along with the resolutions of the Council and the reports of the Education Committee. These papers have been considered by our counsel during the recess and he has written his opinion which, as a confidential document, will be placed in the hands of members of Council.

The Apothecaries' Hall, Dublin.

Intimation has been given to the Council that the Examining Board in Ireland, formed by the combination of the Royal College of Surgeons and the Apothecaries' Hall, has been dissolved. The Examination Committee will report on inspections of the Third and Final Professional Examinations of the Apothecaries' Hall, Dublin. Dr. G. A. Gibson, who has acted as the Council's inspector of the examinations of this body for two years, has intimated to me his resignation. As he has discharged his duties with great care and judgment the Council will, I hope, give me authority to express our thanks to him for his services."

Dr. MACALISTER moved that the Council thank the President for his address and request him to allow its being printed in the minutes, and in doing so he said he desired to

associate himself very warmly with all that Sir William Turner had said about their late colleague, Dr. Leech.

Mr. BRYANT seconded the motion, which was at once agreed to by the Council.

The Service Examination Results.

The REGISTRAR (Mr. H. E. ALLEN) presented two tables, one showing the results of the competition held on July 27th for commissions in the medical staff of the Royal Navy and the other showing those of the competition held in August for commissions in the medical staff of the Army.

Dr HERON WATSON, seconded by Sir DYCE DUCKWORTH, moved:—

That the thanks of the Council be conveyed to the Director-General of the Medical Department of the Royal Navy and to the Director-General of the Army Medical Service for the returns which they have respectively again furnished to the Council, with the request that these returns may in the future continue to be furnished to the General Medical Council.

This motion was agreed to.

Dr. BRUCE moved that the tables be referred to the Examination Committee for their consideration. These tables, he said, contained valuable matter and were not in his opinion sufficiently considered.

Mr. BROWN, in seconding this motion, called attention to the large number of rejections in the Army examination.

Sir DYCE DUCKWORTH, chairman of the Examination Committee, opposed the motion on the ground that the tables spoke for themselves and his committee could do nothing with them. The subjects to which Mr. Brown had referred to were not strictly medical subjects. They were subjects intended to test the general culture of the candidate, such a subject, for instance, as physical geography. Most members were aware of the difficulties at present in securing candidates of a high class for the army and he need not go into them. As to the navy he, as an old examiner, was able to say that the condition of the medical service was most satisfactory as regards the quality and high standing of the men who applied and were appointed to it. As chairman of the Examination Committee he must decline the proposed task.

Dr. MCVAIL said that he was a member of the Examination Committee and he thought that these tables should be submitted to it. In the case of the army examination it appeared that there were 50 vacancies offered for competition, that 15 men came forward, and that only nine of them got appointments. It was well known that the army could not get the necessary supply of surgeons. So much had that been the case that the War Department had given nominations for places without examination at all to various universities and corporations. It would seem, therefore, that the rejected candidates or the candidates who did not receive appointments at this examination must have been sadly incompetent and he thought that that was a matter for inquiry. If, as Sir Dyce Duckworth said, the insufficiency was in subjects not strictly medical then this Council ought to know it. This Council had of course nothing to do with physical geography. What this Council had to see was that men getting diplomas from the various universities and corporations were competent in the subjects recommended by the Council.

The motion to refer the tables to the Examination Committee was carried by 11 to 10 votes.

Procedure in Dental Penal Cases.

On the recommendation of the Executive Committee the Council adopted certain amended standing orders relating to dental penal procedure. The principal object of the amendments made is to enable the Council to do what it frequently does in medical cases, postpone the final judgment after deciding that the charge is proved.

Vacancy in the Executive Committee.

Sir Christopher Nixon was appointed to fill the vacancy in the Executive Committee due to the resignation of Sir Philip Smyly.

Pharmacopœia Committee.

Dr. MACALISTER brought up the following report from the Pharmacopœia Committee:—

The Pharmacopœia Committee, in common with the whole Council, have to lament the loss they have sustained by the untimely death of Dr. Leech. As an active member of the committee since 1892, and as their chairman since 1898, he rendered zealous and valuable service in the preparation of the British Pharmacopœia, 1898, and of the Indian and Colonial Addendum. A special record of the committee's indebtedness to him was made in their report to the Council of May 31st, 1898. He also brought about the establishment of a regular conference between representatives of the committee and of the pharmaceutical societies of Great Britain and of Ireland for the investigation of questions bearing on the revision of the Pharmacopœia. At the suggestion of this conference a number of important researches have been begun, and some, notably those of Professor H. G. Greenish on the solubilities of official drugs, have in part been published. Such researches will be of material assistance to the committee in the task of revising the Pharmacopœia and will serve to carry forward the work in which Dr. Leech took so deep and effective an interest. His portrait, presented by a member of the committee, has been placed in the committee room.

The committee have elected Dr. MacAlister to be chairman in the place of Dr. Leech.

Up to the present the number of copies of the British Pharmacopœia, 1898, printed for the Council has been 31,500. Of these 29,840 have been disposed of, leaving a balance of 1660 copies in hand. The number sold in the present year up to Nov. 24th was 2008. As the publication of the Addendum will probably increase the demand for copies of the Pharmacopœia, to bind up with it, the committee recommend that the President be authorised to direct the printing of an additional issue of 1500 copies, should this appear to be necessary before the next meeting of the Council.

The committee have met repeatedly during the recess for the purpose of completing the draft of the Indian and Colonial Addendum, 1900, which forms the subject of a separate report.

During this work the need of a reference collection of medicinal plants and other articles of materia medica has more than once been felt when questions of description or identification were under discussion. The nucleus of such a collection already exists in the specimens forwarded by some of the colonial authorities. The committee ask power to make the collection complete and to furnish the committee room with proper cases for its reception.

Donations of books for the reference library have been made by Mrs. Leech and Dr. Attfield, to whom the thanks of the Council are due. Dr. Payne has undertaken the duty of supervising the arrangement and cataloguing of the library, which now contains a number of rare and interesting works.

In moving the adoption of the report Dr. MACALISTER said that he learned that the amount due by the publishers was about £465. On the Addendum, however, they had spent from £300 to £400 and that, of course, would come out of the balance at the credit of the committee. The committee, however, would be recouped, and more than reconped, by the sale of the Addendum itself.

Dr. MCVAIL, seconding the motion, spoke of the value and importance of the proposed small museum.

The Council adopted the report.

Inspection of Final Examinations.

The REGISTRAR (Mr. H. E. ALLEN) read a report which stated that

The Executive Committee think it well to report to the General Council what steps they have taken consequent to the resolution passed by the General Council on May 30th, desiring them to forthwith make arrangements for a systematic inspection and visitation of the final examinations of the several licensing bodies. Time has not yet allowed for the completion of these arrangements, but the Executive Committee have decided that, following the precedent adopted in 1892, it will be well to spread the inspection over three years, and to inspect the examinations in the following order:—First year: Scottish Corporations, Irish Universities. Second year: Irish Corporations, English Universities. Third year: English Corporations, Scottish Universities. From information already obtained by the office a calendar will be prepared showing the dates when these respective examinations take place in each year, and members of Council will be requested to state at the close of each year the examinations which they would be prepared to visit along with the inspector, it being understood that it is not the custom for a member to visit the examinations of those bodies with which he is officially connected or in his own division of the kingdom.

The committee agreed to invite Sir George Duffey to undertake the duties of inspector for the year 1901.

Dr. MACALISTER moved that this report be received and entered on the minutes. He said that it should be put on the minutes as a record and that it did not require the adoption by the Council.

Mr. BRYANT seconded the motion.

Dr. GLOVER supported the committee's recommendation.

The motion was agreed to.

The PRESIDENT asked that the names of members who would act as visitors should be sent to him before the end of the session, it being understood that, following precedent, there should be different visitors for the corporate bodies and for the universities.

Irish Arrangements.

The REGISTRAR read the following communication from the Royal College of Surgeons in Ireland as to the severance of its connexion with the Apothecaries' Hall, Dublin:—

Royal College of Surgeons in Ireland, Dublin,
July 20th, 1900.

SIR,—I am directed by the President and Council to inform you all connexion between this College and the Apothecaries' Hall for the holding of Conjoint Examinations ceased on the 1st of the present month.

Yours truly,
JOHN BARTON, F.R.C.S., Secretary of Council.

H. E. Allen, Esq., Registrar.

Dr. MACALISTER, who moved that this communication should be entered on the minutes, mentioned that candidates for the "final" could go to the Apothecaries' Hall.

The communication was received and entered on the minutes.

Bogus American Diplomas.

The next business on the programme was the receipt of a communication remitted to the General Medical Council by the Executive Committee from the Foreign Office in regard to the sale of false American diplomas.

Foreign Office, Sept. 24th, 1900.

SIR,—I am directed by the Secretary of State for Foreign Affairs to transmit to you, for the information of the General Council of Medical Education, the accompanying copy of despatches from Her Majesty's Consul at Chicago respecting the sale of false American diplomas.

I am, Sir, your most obedient humble servant,
F. H. VILLIERS.

The Registrar of the General Medical Council.

[COPY.]

British Consulate, Chicago, July 3rd, 1900.

MY LORD,—I beg to report for your lordship's information that the postal inspector of Chicago has at last been able to arrest and to have held in heavy bail for trial Dr. Armstrong and his associates of the People's Institute, Van Buren-street, Chicago.

Armstrong and his partners under various names have been doing a very lucrative business in selling diplomas to persons in England, and their agent, Z. Whightman Van Appin, disposed of large numbers of useless diplomas in British India. I hope to obtain a list of the persons who purchased these diplomas in India from Mr. Van Appin and will at once forward it to your lordship.

From a postcard that has been held by the postal authorities, who have been so good as to communicate it to me, I see that Mr. Allan Fisher, who styles himself M.D. and Ph.D., writing on the 5th ult. from "Mere," "Wiltshire," to Dr. Armstrong, People's Institute, Van Buren-street, Chicago, states that he has delivered a diploma of D.D. to a Mr. Johnson (no address given), who is very much pleased with it, and that he had hopes of selling two M.D. diplomas for the sale of which he was in treaty with persons whose names are not mentioned.

The postal authorities also hold return postcards showing that Dr. Armstrong and company are in treaty with the following parties either to sell diplomas or have already sold them diplomas:—

1. Rai Tharoda Kanto Lahiri, M.D., 6612, Simla-street, Calcutta; and is corresponding with:—
2. Dr. Hassall, 76 and 80, Paul-street, Manchester, England;
3. J. M. Lethera, M.D., House No. 3, Zier Thost Bang (?), Girgaum, Bombay, India;

This address is very indistinctly written.

4. Z. Wightman Van Appin, c/o Dr. J. Murdoch, 714, Shelby-street, Louisville, Kentucky.

I think the police will probably be able to find out some useful details of the business of bogus diploma-selling by Dr. Armstrong in Great Britain from Mr. Allan Fisher, who is now acting as selling agent for the diplomas of the Independent Medical College and the Metropolitan Medical College of Chicago, Illinois. These so-called colleges have charters issued by the State of Illinois, the laws of the State being very lax in the matter of granting such charters, but their diplomas are being sold all over Great Britain and British India, and probably in the colonies to anyone who may be willing to buy them.

It is possible that Mr. Allan Fisher has been duped by Armstrong and company, but he is now evidently acting as their agent and sells D.D. Diplomas as well as M.D., signed by the same people, or rather by the same person, as it has been found out that all the signatures are made by a girl in different handwritings.

Armstrong and his associates have been held in heavy bail for trial for making use of the mails to defraud, and for the moment the diploma mill is said to be closed.

Her Majesty's Government of India may also be able to find out through the addresses I have given above if there has been anyone appointed in India to sell the diplomas.

Mr. Z. Wightman Van Appin himself bought a Ph.D. and M.D. diploma for $144, and then was sent to India with a quantity of blank diplomas of all kinds to fill in.

I will inform your lordship later on of the result of the trial of Armstrong and company.

I have, &c.,
(Signed) WM. WYNDHAM,
Her Majesty's Consul.

Her Majesty's Principal Secretary of State for Foreign Affairs.

[COPY.]

British Consulate, Chicago, August 31st, 1900.

MY LORD,—With reference to my dispatch, No. 25 of the 3rd July last, I have now the honour to forward a list of persons who are residents in Great Britain, India, and the colonies who appear to have been duped by the diploma mill of Armstrong and company, of Chicago:—

Pectells, Wm. B., Melbourne, Australia; Fisher, M.D., Allan, Bristol, England; Thomson, D.D.S., Benj., Sydney, Australia; Chand, M.D., Tatch, Ludhiana, India; Kennedy, M.D., E. M., Bristol, England; Secretary, Bank of Bengal, India; Lear, W. B., Brighton, Canada; Allahabad Bank, Allahabad, India; Fisher, A., Leigh, England; Newton, Ph.D., F. H., Melbourne, Australia; Hoverman, M.D., N. Desar, Baroda, India; Nauaratly, M.D., B. H., Ahmedabad, India; Saryana, D. F., Bombay, India; Kapen, M.D., R. D., Baroda, India; Trilli, Rodley Mort, Jamaica, W.I.

There are doubtless many others who have purchased bogus diplomas, but I have as yet only found out the above cases.

I have, &c.,
(Signed) WM. WYNDHAM,
Her Majesty's Consul.

The Secretary of State, Foreign Office.

The REGISTRAR explained that none of the names in the foregoing list were those of practitioners registered in the British Medical Register.

Dr. MACALISTER said it was desired that the utmost publicity should be given to these documents. That, he assumed, would be obtained by the Council's placing the documents on their minutes.

It was resolved to receive the communications and enter them on the minutes.

Dr. GLOVER thereupon moved:—

That the President be requested to thank the Secretary of State for Foreign Affairs for transmitting to the Medical Council the foregoing communication regarding the sale at Chicago of false American diplomas, and to ask that the Council may be informed as to the result of the proceedings against Dr. Armstrong and his associates.

He thought that it would be well if the trade in bogus degrees could be stopped, and he thought that the steps taken by the Chicago authorities and our consul in that city would meet with the approval of the medical profession of the United States. In placing the documents in question on the minutes of the Council and passing his motion he felt that they were only advancing the views of the educationists of America who were taking great interest in this question.

Dr. LOMBE ATTHILL seconded the motion, which was unanimously agreed to.

Exemption from Examination.

The Council next considered a report by the Registrar on evidence of previous examination required by the various licensing bodies from candidates claiming exemption from further examination in certain subjects. This report was:—

I. On May 30th, 1900, the General Council passed the following resolution: "That the Registrar be instructed to inquire of the various examining boards what evidence they require to be produced by candidates who claim to be exempted from examination in particular subjects on the ground that they have already passed in these subjects before other licensing bodies." II. Pursuant to this instruction the Registrar on June 11th, 1900, addressed a circular letter of inquiry to all the licensing bodies, to which all have replied. III. An abstract of the answers received is set forth in what follows:—

The Royal College of Physicians of London.—With regard to the First Examination.—When a candidate claiming exemption from any or all of the parts of this examination can show that he has passed in any or all of them at an examination for a degree in medicine at a university in the United Kingdom, in India, or in a British colony, or when a candidate can show that he has obtained a colonial, Indian, or foreign qualification (not necessarily a degree in medicine) entitling him to practise in the country in which it has been conferred, he must produce a certificate from the president, dean, or secretary of the university stating definitely the subject or subjects in which he has passed. In some cases proof of the possession of the qualification is accepted as evidence, provided there is further evidence as to the curriculum including examination in the subjects of the first examination. *With regard to both the first and second examinations.*—Any student of a university of the United Kingdom who can prove by a certificate from the dean, registrar, or other recognised official of the university that he has passed in the subjects of these examinations of the College at an examination for a degree in medicine can claim exemption from such examinations. The possession of a degree in medicine or surgery of a colonial, Indian, or foreign university recognised for the purpose exempts the holder from both these examinations. Certificates of the course of study must be produced, but evidence of the possession of the degree is accepted as proof of the passing of equivalent examinations.

The Royal College of Surgeons of England.—Refers the Council to the answer sent by the Conjoint Board.

The Conjoint Board of the Royal Colleges of Physicians and Surgeons of England.—Candidates desiring exemption from the subjects of the first and second examinations are required to produce a certificate from the dean, secretary, or other authority of the university stating the subjects in which they have passed in the examination for a degree in medicine of the university. In certain cases, however, especially in the cases of graduates in medicine of recognised universities with the requirements and subjects of the various examinations of which the Board is acquainted, the degree itself is accepted as evidence that the earlier examinations have been passed.

The Apothecaries' Society of London.—Candidates presenting themselves for the final examination of the Society and who have passed the primary examination of some other recognised body are required to produce direct evidence from the secretary of such body as to the subjects passed, with a clear statement that the said subjects are complete and not elementary. No exemptions from the final examination are made.

The University of Oxford.—Allows no exemptions.

The University of Cambridge.—Allows no exemptions.

The University of Durham.—A candidate who has passed the first examination of the English Conjoint Board is exempt from the subject of biology in the first examination of the University. A certificate from the secretary of the board is required. Candidates holding a qualification from a recognised licensing board of the United Kingdom at the date of entry for the first examination of the University are exempt from examination in elementary anatomy and biology, but are required to pass in chemistry and physics. The presence of the candidates' names on the Medical Register is the evidence accepted in this case.

The University of London.—Allows no exemptions.

The Victoria University.—Exemptions seldom allowed. Qualified practitioners only are exempted from particular subjects of the examinations for the M.B. degree, and the Medical Register is accepted as evidence, though certificates could be required if it were desired to know what particular examination a candidate had passed.

Royal College of Physicians of Edinburgh.—The Single Licence only is granted to candidates who hold a recognised qualification in surgery on their filling up a prescribed declaration and producing their diploma.

Royal College of Surgeons of Edinburgh.—The Single Licence only is granted to candidates who hold a recognised qualification in medicine on their lodging a schedule of curricula and producing their diploma.

Faculty of Physicians and Surgeons of Glasgow.—Exemption from any particular subject can only be obtained on the production of an open certificate or the receipt of a private official attestation proving that a candidate has already passed in that subject before another licensing body.

Conjoint Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow.—Candidates for exemption in any subject of any examination must produce a certificate—or cause an official communication to be sent direct to the board—showing that they have passed an equivalent and final examination in that particular subject before one of certain specified boards.

University of Edinburgh.—The only exemption from examination granted to candidates for the degrees of M.B. and Ch.B. is in the case of those who have completed a course of study and passed an examination in botany, zoology, physics, or chemistry at a university of the United Kingdom or at any other university whose course of study and standard is considered by the Senatus Academicus to be satisfactory; and they must, in the case of a university of the United Kingdom, produce a certificate signed by the dean of the university in question stating the subjects passed in, and that they qualify for a degree in arts or science; and in the case of other universities a similar certificate must be produced, together with the diploma, or simply the diploma and a reference to the calendar setting forth the regulations under which it was obtained.

University of Glasgow.—Examinations of other licensing bodies are not recognised as exempting from medical professional examination, but candidates claiming exemption from certain scientific subjects on the ground of having already completed a course of study qualifying for a degree in science or in arts, passed in such subjects at a university of the United Kingdom or other university specially recognised for the purpose by the university court, must produce university certificates showing that they have passed the examination in the particular subject or subjects in which exemption is claimed.

University of Aberdeen.—Same as the University of Glasgow.

University of St. Andrews.—Same as the University of Glasgow.

Conjoint Board of the Royal Colleges of Physicians and Surgeons of Ireland.—It is the invariable practice that a formal certificate must be produced, signed by the proper officer of a licensing body, at which any subject has been passed exemption from which is sought.

Royal College of Physicians of Ireland.—The Single License granted only to registered medical practitioners, who must produce their registration certificates. As to examinations conducted conjointly, the requirements are those stated by the Conjoint Board in Ireland.

Royal College of Surgeons in Ireland.—Same as the Conjoint Board in Ireland.

Apothecaries' Hall, Dublin.—A certificate must be produced, or a letter directly forwarded by the registrar of the licensing body at which the candidate states that he has passed certain subjects and is entitled to exemption in respect of them.

University of Dublin.—A certificate must be produced, signed by the accredited official of a licensing body, showing that an examination has been passed in a particular subject, or a diploma is held to cover all the examinations required to be passed in order to obtain it.

Royal University of Ireland.—Allows no exemptions.

Mr. HORSLEY, who thought this report exhibited a dreadful state of affairs in regard to the medical education in this country, moved—

That a schedule of the universities or licensing bodies recognised for the purposes of exemption from examination be obtained from each licensing body.

He said that in justice to their students the subject was one which ought to be fully inquired into by the Medical Council. It was not good enough to say that "the degree itself was accepted as evidence that the earlier examinations had been passed." The Germans took that view and if that was not good enough for the Germans that should not be good enough for them.

Sir WILLIAM THOMSON seconded.

On a division 12 voted for and 12 against. The President gave his casting vote against, in order, as he said, to observe the universally followed rule in such cases—namely, "keep things as they are."

Mr. HORSLEY'S proposal was accordingly rejected and the report was received and entered on the minutes.

Dental Business.

Dr. MACALISTER submitted the following report from the Executive Committee on Dental Business transacted by it since the May session, viz.:—

(a) The prescribed conditions in each case having been duly fulfilled the names of the under-mentioned persons have been restored to the Dentists' Register, from which they had been erased in conformity with the provisions of Section 12 of the Dentists' Act:—Isaac Bailey, Ernest S. Barlow, Emile H. Chapman, Hedley H. Ham, Frank A. Harsant, Frederic E. Ladmore, Joseph Moyle, Frederick G. Roberts, James Stett, Ernest R. Tebbitt.

(b) The committee considered and approved a Standing Order to be substituted for the present Standing Order XV., 11.

(*c*) The committee further considered the cases of Mr. E. H. C. Bailey and Mr. F. W. Bailey, with regard to whom, on May 29th, they had passed the following resolution:—

That Mr. E. H. C. Bailey and Mr. F. W. Bailey be asked to produce the certificates required by the regulations under which they commenced their studies in proof of their having fulfilled the requirements of the Board.

Whereupon it was resolved—

That the further consideration of these cases be postponed till the return of Mr. Bailey from Australia.

Nothing further having been heard from Mr. Bailey in regard to this matter the committee resolved—

That the cases of E. H. C. Bailey and F. W. Bailey be referred to the Dental Committee for inquiry into the facts.

This report, on the motion of Dr. MACALISTER, seconded by Mr. TOMES, was received and entered on the minutes.

The Council adjourned.

WEDNESDAY, NOV. 28TH.

The Council met again to-day, Sir WILLIAM TURNER being in the chair.

The Diploma in Public Health.

The first business on the programme was to receive the following report by the Public Health Committee, viz.:—

1. INSTRUCTIONS TO THE COMMITTEE.

On Dec. 5th, 1899, the General Medical Council passed the following resolution in regard to a report by the Committee on the interpretation given at different places to the regulations of the Council as regards the course of study for the Diploma in Public Health:—

"That the report of the Public Health Committee as amended be received and entered in the minutes and that copies be sent to members of the Council and transmitted to the bodies which confer diplomas in public health for their observations on the recommendations made by the Committee."

2. ANALYSIS OF THE REMARKS OF THE BODIES.

The Committee now present the following analysis of the remarks of the bodies on the report of the Public Health Committee.

1. The Committee report that five bodies state that they have practically no criticisms to offer—viz.: (1) the University of Oxford; (2) the University of Durham, (3) the University of London; (4) the University of Aberdeen; (5) the University of Dublin; while one body "has the matter still under consideration."

2. Other licensing bodies present observations in regard to the several recommendations of the Committee.

3. As regards Rule I. (1), viz.: "(1) A period of not less than 12 months shall elapse between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to any examination, or any part thereof, for a diploma in sanitary science, public health, or state medicine," the Committee in Recommendation I. advised that this rule be maintained. The licensing bodies are practically unanimous in favour of the recommendation.

4. As regards Rule I. (2), viz.: "(2) Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught," the Committee made the following Recommendation II.—viz.: That Rule I. (2) be so far modified as not necessarily to require evidence as to attendance on a course of practical laboratory instruction in the case of candidates already competent in the branches of study in question; and that it read as follows:—"(2) Every candidate shall, after obtaining a registrable qualification, either have produced evidence that he has attended a sufficient course of practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught; or shall otherwise have produced evidence that he has received adequate instruction in the branches of study referred to."

The Licensing Bodies have made the following observations in regard to this recommendation:—

(i.) THE COMMITTEE OF MANAGEMENT OF THE TWO ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND

feel that the sentence in this proposed Rule "adequate instruction in the branches of study referred to" is "too indefinite, and they consider that it is desirable for every candidate to attend a recognised course of instruction, although the number of attendances may well be left open as proposed in the first part of the clause. The committee therefore suggest the omission of the sentence after the word 'taught.'"

(ii.) THE UNIVERSITY OF CAMBRIDGE.

"The committee of the State Medicine Syndicate of the University of Cambridge, which has conducted examinations in sanitary science for medical officers of health since 1875, have considered the report of the Public Health Committee of the General Medical Council, dated Dec. 4th, 1899, and beg leave to submit to the Council the following observations:—

"No serious difficulty has been found in the working of the Council's rules in their present form.

"The present requirement in general terms of two courses of six months each (not necessarily non concurrent throughout their whole extent) in laboratory work and in out-door sanitary practice is satisfactory, and should not be appreciably relaxed. It is to be feared that such a general relaxation of the rule regarding these courses as appears to be proposed in the report would tend to depreciate the standard of that special and systematic study of the several branches of science that concern public health which is now required of candidates for the diploma. The requirement of six months' practical sanitary work (of all pertinent kinds) should be retained by all examining bodies; and the practical courses of laboratory instruction should be limited to such as are recognised and approved by these bodies. The study of chemistry, physics, and general pathology (including the elements of bacteriology), which usually forms part of the curriculum for an ordinary medical qualification, is not sufficiently relevant to the special duties of a medical officer of health to take the place of the study of their specific applications to hygiene which the present rules enjoin.

"The renouncement of the present requirement of these post-graduate courses would therefore have a deteriorating effect, and would

tend to increase the proportion of rejected candidates at the examinations."

(iii.) THE VICTORIA UNIVERSITY

suggests the following reading of the proposed recommendation: "Every candidate, *before admission to the examination*, must either produce evidence that he has attended *satisfactorily* a sufficient course of practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma, in which chemistry *as applied to public health*, bacteriology *as applied to public health*, and the pathology of the diseases of animals transmissible to man, are taught; or shall otherwise have provided evidence that he has received adequate instruction in the branches of study referred to." (The suggested changes are italicised.)

(iv.) THE COMMITTEE OF MANAGEMENT OF THE CONJOINT BOARD OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

"The committee cannot help viewing the adoption of the proposed alteration with considerable doubt and apprehension."

(v) THE UNIVERSITY OF EDINBURGH.

takes exception to the view that laboratory work done before qualification can be accepted as an equivalent for the six months of special laboratory work required under the existing rules of the Council.

"While examination is the only means of testing a candidate's knowledge, it is regarded by most examiners as an imperfect one. Under the present regulation there is the added guarantee that the candidate has given six months to the special work at a time when he can devote himself entirely to it and related studies."

(vi.) THE UNIVERSITY OF GLASGOW

"is unable to agree with the modifications of Rule I (2) as proposed," and suggests as an alternative to the six months required by the existing rule the following: "or (*b*) shall have produced evidence by the course of study for a degree in science which he has obtained, that he has received adequate instruction in the branches referred to."

(vii.) THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

"The suggested modifications contained in the proposed new rules 2 and 3 seem to this Council to reduce the certificate to the level of mere shams."

5. As regards Rule 1 (3), viz.:—

"(3) Every candidate shall have produced evidence that during a period of six months after obtaining a registrable qualification he has practically studied the duties of out-door sanitary work—

"(*a*) In England and Wales either under the medical officer of health of a county or of a single sanitary district having at the date of the last census a population of not less than 50,000 or the medical officer of health of a combination of two or more sanitary districts having collectively at the date of the last census a population of not less than 35,000; or

"(*b*) In Scotland or Ireland under the medical officer of health of a county or of one or more sanitary districts having at the date of the last census a population of not less than 30,000; or

"(*c*) Under a medical officer of health who is a teacher in the department of public health of a recognised medical school.

"The certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of the county or district consents to the assistant officer giving such instruction.

"*** Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation."

The Committee made the following Recommendation 3, viz.:—

That the first paragraph of Rule I (3) be modified so as to read as follows:—

"Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has practically studied the duties of out-door sanitary work under a medical officer of health."

The licensing bodies have made the following observations in regard to this recommendation:—

(i.) THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND make no comment.

(ii.) THE VICTORIA UNIVERSITY

suggests the following modification: "Candidates to produce certificates 'of having received instruction in practical sanitary work on not less than 60 days under the medical officer of health of a county or of a large urban district.'"

(iii.) THE CONJOINT BOARD OF SCOTLAND

say that the proposed changes generally "appear to them to be retrograde in character."

(iv.) THE UNIVERSITY OF EDINBURGH

"thinks that three months is a reasonable minimum period for this instruction."

(v.) THE UNIVERSITY OF GLASGOW.

The Committee of Faculty cannot acquiesce in the modification of Rule I. (3) proposed by the Committee of Council, and it recommends that for the rule as proposed the following should be substituted:—

"Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has practically studied for a period of not less than three months the duties of a medical officer of health; provided always that this course is not taken concurrent with the course of laboratory instruction; or for a period of not less than six months where this course and that of laboratory instruction are allowed to run concurrently."

The committee sees grave objections to the rule as proposed. In the first place, no period of time during which the course of practical study must run is laid down, and no definite conception is given of the kind or character of practical study in which the candidate is to engage; indeed, a simple certificate by a qualified medical officer of health would meet the demands of the proposed rule, and, in any case, serious differences of interpretation to the term "practically studied" would certainly result, depending upon the individual conceptions thereof of different medical officers of health. Already the practice in this respect is sufficiently divergent to demand the laying down of a minimum fixed period or even programme of study. Obviously, since the objective point of most candidates for Diplomas in Public Health is the position of medical officer of health it becomes of the first importance that candidates should be well prepared, not only for the examinations precedent to the obtaining of a diploma, but more especially for the efficient practical performance of the duties of such an office. It may be urged that an efficient board of examiners is an effective safeguard against the imperfectly prepared candidate. To some extent this is true; at the same time, it is by no means impossible for a candidate imperfectly equipped in practical knowledge but well prepared in book knowledge, to pass the necessary examination in this department, and if the Diploma in Public Health is to maintain its high character and to form evidence of the fitness of its possessor for the important practical duties of a medical officer of health, it is essential that the evidence of instruction in practical sanitary work ought to be substantial. In short, unless a definite minimum period of carefully defined study in this department is laid down in the rule, there would be no guarantee as to its efficiency.

On the merits of the question, the Committee of Faculty believes that a period of three months would be sufficient for the study of practical sanitation, provided that the whole time of the candidate be devoted to the subject, and that the period of study did not run concurrently with the course of laboratory instruction, or, alternatively, a period of six months running concurrently with the other. But the Committee of Faculty is of opinion that the length of time devoted to the study of practical sanitation does not so much matter as the kind and range of the subjects studied; and in order to ensure some general uniformity of range of instruction, it would suggest that a schedule of subjects to be studied should be drawn up by each medical officer of health who is entitled to teach candidates, and should be submitted to each body granting a diploma in public health for approval, in conformity with which certificates of instruction should be drawn. Such a method would tend to prevent inequalities of practice in the granting of such certificates.

The committee is in entire concurrence with the views of the Committee of Council regarding the necessity of engaging the services of competent examiners for each subject of examination by the bodies granting diplomas; and it also agrees with the proposed addition (*d*) to Rule I. (3).

(vi.) THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND

recommend that Rule I (3) be modified so as to read as follows:—

"Every candidate shall have produced evidence that after obtaining a registrable qualification he has practically studied the duties of outdoor sanitary work under a medical officer of health in England or Scotland, and in Ireland under such persons as may be approved by the licensing bodies."

(6) As to recommendation 4, viz.:—

In view of the increased latitude thus advocated as regards the teaching to be required under Rule I (2) and (3), your Committee have arrived at the further conclusion that the bodies granting diplomas in public health should always engage the services of (*a*) Examiners competent in the sciences of bacteriology, chemistry, &c., in relation to public health; and (*b*) examiners who have themselves had practical experience in the outdoor work of a medical officer of health.

The Committee report that Recommendation 4 is practically accepted by all the bodies.

(7) As to Recommendation 5, viz.:—

It having come to the knowledge of the Committee that there would be advantage in making some extension in the number of the medical officers of health entitled to certify as to compliance with the terms of Rule I. (3), your Committee are of opinion that there would be advantage in adding to the officers defined under (*a*), (*b*), and (*c*) the following:—

"(*d*) Under a medical officer of health who devotes his whole time to public health and allied duties and is not engaged in private practice."

The licensing bodies have made the following observations in regard to this recommendation:—

(i.) THE UNIVERSITY OF CAMBRIDGE

reports that as to the question of the overlapping of the prescribing courses of laboratory work and outdoor sanitary practice there seems to be no good reason for laying down a rule of the Council. No harm can arise from a certain latitude to candidates in the distribution of their time, provided that the courses are efficient and not hurried through in a few weeks, and that the examinations are of a sufficiently searching character.

The Committee accordingly deem it inexpedient for the purposes of the diploma of the University as well as of other examining bodies that the Council's rules should be relaxed to the extent contemplated in the report.

The Committee approve of the proposed extention of Rule I (3) *d* as to work with a medical officer of health who devotes his whole time to public health and allied duties, and is not engaged in private practice.

(ii.) THE UNIVERSITY OF EDINBURGH.

are of opinion:—

(*a*) "That the smaller sanitary areas do not provide sufficient opportunities of study to ensure the requisite amount of practical training," and

(*b*) "That if the pupil possessed a competent knowledge of the scientific principles which form the subject of hygiene the amount of this tuition might be reduced;"

(*c*) "That three months is a reasonable period for this instruction."

3. CONCLUSIONS.

Your Committee have duly studied the observations and representations of the several licensing bodies which have commented on the provisional recommendations of 1899. Further, and with particular reference to demand for practical instruction in the duties, routine and special, of medical officers of health, the Committee have ascertained, from official sources of information, that in England and Wales and in Scotland facilities already exist, and in Ireland are likely to be ere long forthcoming, sufficient to meet in this sense the wants of candidates for the Public Health Diploma.

Again your Committee have considered the case of candidates who hold official positions under the Secretaries of State for War, for India, and the colonies, so fully referred to in the report of the Public Health Committee, December, 1899.—(Minutes, xxxvi., p. 755.)

With these additional data before them, and upon reconsideration of

the whole subject, your Committee recommend the following rules in substitution for those now in force:—

DRAFT RULES FOR DIPLOMA IN PUBLIC HEALTH.

I. A period of not less than 12 months shall elapse between attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to any examination, or any part thereof, for a diploma in sanitary science, public health, or State medicine.

II. Candidates shall be separated into two classes, juniors and seniors.

Juniors to be candidates in regard of whom 10 years have not elapsed since attainment of their registrable qualification.

Seniors to be candidates who have possessed a registrable qualification for 10 years.

III. Junior candidates.

(1) Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma, in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught.

(2) Every candidate shall have produced evidence that after obtaining a registrable qualification he has during six months, other and separate from the like period employed in laboratory work as required under (1), been associated day by day in the duty, routine and special, of public health administration such as is exercised:—

(a) In England and Wales by the medical officer of health of a county or of a single sanitary district having a population of 50,000, or by a medical officer of health giving his whole time to public health work.

(b) In Scotland by a medical officer of health of a county or counties, or of one or more sanitary districts having at the date of the last census a population of 30,000.

(c) In Ireland by a medical superintendent officer of health of a district or districts having at the date a population of 30,000; or

(d) By a medical officer of health who is also a teacher in the department of public health of a recognised medical school.

(e) The certificate of an assistant medical officer of health of a county or of a sanitary district of 50,000 population may be accepted, provided the medical officer of health of the county or district permits the assistant officer to give such instruction.

(3) Every candidate shall produce evidence that, after obtaining a registrable qualification, he has, during three months, practically observed and studied the clinical and administrative work pertaining to the medical superintendence of a hospital for infectious diseases.

The three months devoted to study in this sense may be concurrent with the administrative work referred to under Section (2), but not with the laboratory work of Section (1).

IV. Senior candidates.

(1) Every candidate shall have produced evidence of having, after having obtained a registrable qualification, attended during six months practical instruction in a laboratory or laboratories, British or foreign, approved by the body granting the diploma in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught.

(2) Every candidate shall have produced evidence:

(a) That he has himself held during five years an appointment as medical officer of health in a district with a population of 5000; or

(b) That he has, during not less than 60 days, received instruction in practical sanitary work under a medical officer of health in the United Kingdom administering a district having a population of 20,000 and upwards.

The 60 days thus devoted to practical sanitary administrative work may be concurrent with the laboratory work required of seniors under Section (1).

Mr. TEALE, chairman of the Committee, moved that the report be received and entered on the minutes. In doing so he explained the position of the Council with regard to the Diploma in Public Health and the circumstances which had led to the inquiry by his committee. It was in May, 1898, he said, that Sir William Gairdner called attention to apparent diversities of interpretation given at different places to the regulations of the Council as regards the course of study for this diploma. The principal requirement involved was that as to the candidate having practically studied the duties of outdoor sanitary work under a medical officer of health during a period of six months. In the report now presented there was dealt with the case of candidates who held official positions under the Secretaries of State for War, for India, and for the Colonies. The committee had considered whether anything could be done to meet the case of these candidates without reducing either the education or the value of this diploma, and they had come to the conclusion that something might be done by dividing the candidates into two classes, one class to consist of men who went in for the diploma soon after their ordinary qualification and the other to consist of men who went in for it 10 or more years after their ordinary qualification. The one class they proposed to call juniors and the other seniors. It would be said that they were letting down the diploma, but in his opinion they were not doing so. There surely was a great difference between men of 10 years' experience and practice in official appointments and men only commencing work. The former would get more out of nine months than the latter would get out of twelve months. He and some of his colleagues on the Committee felt that it was a question whether it was desirable by the action of this Council to restrict too much the sanitary office to men who at once became specialists in the matter—to divorce from it too much men who had been in general practice and who had acquired thereby experience and breadth of view.

Dr. BRUCE seconded the motion.

Sir JOHN BATTY TUKE moved as an amendment that the report be re-committed, and he said he did so as a member of the Council who had perhaps had more to do with the forming of the regulations for this diploma than anyone now present. Eleven years ago he acted with Sir John Simon and Sir John Struthers, and the general results of their advice had been accepted by the Council. He opposed the report on the ground that it lowered the general tone of education and of examination. He could not help regretting that the report had not been sooner in the hands of members in order that they might have examined it carefully and compared it with the other literature on the subject. The Acts of Parliament conferred on the Council very peculiar and exceptional powers over these Public Health diplomas—powers materially different from those they exercised over professional education examination and registration, and the Council had endeavoured to set a high standard of proficiency—in fact, to put the examinations upon the honours level. He would like to know who had asked for any change in the rules of the Council. They were told that the pressure came from departments of the Government, who requested that in order to allow officers abroad to obtain these diplomas, they should reduce the qualifications. He saw no reason for this. If the Government wished to bring what they desired about the simple thing for them to do was to grant their officers study leave. One of the great grievances of medical men in the army service was that this study leave was not granted them, and if the Council agreed to the change now proposed it would only make the War Office the more persistent in its refusal. The licensing bodies had not asked for the change; on the contrary, they opposed it, and it was a new feature in the deliberations of this Council to find the bodies asking for the maintenance of a high order of education and this Council endeavouring to lower it. In conclusion, he submitted that no sufficient reason had been given for the proposed change. Certainly there was no dearth of diplomates in Public Health, for if they looked at last year's Register they would find that 150 men had been granted this diploma, which was something like five times more than the necessities of Great Britain and Ireland.

Dr. GLOVER seconded the amendment.

Sir CHRISTOPHER NIXON, after complaining of having had insufficient time to study the report, said that he hoped that any conclusion the Council came to on this subject of the Public Health diploma regulations would be final. Although he thought the report capable of amendment, he was not prepared to adopt the extreme step proposed by Sir John Batty Tuke of sending it back to the committee.

Dr. MCVAIL said that he thought the Council should proceed to the consideration of the report. He would remind the Council that the late Sir Richard Thorne had told them that he saw great necessity for making some provision for men who had been a long time in the profession getting their diploma upon a somewhat shorter curriculum, and he would point out that while the committee proposed that the curriculum for these men should be somewhat different they did not propose a different examination. He submitted that a man who had been in practice for a number of years did not need so long a period of study as a man who had only finished his student career. A study of the proposed draft rules would show that there was no lowering of the standard but rather a raising of it.

Sir WILLIAM GAIRDNER recalled the circumstances which led to the inquiry by the committee and said that the work of the committee had gone somewhat beyond what was originally contemplated. He must support the amendment because it appeared to him that the Committee left the question in a most unsatisfactory position.

Dr. BRUCE repudiated the imputation that there was any reducing of the present restrictions. They were not reducing the restrictions and, indeed, if they struck a balance they would find that they were increasing them.

Dr. GLOVER said that he felt that the constant recurrence of this important subject was most unsatisfactory and he saw no justification for its resuscitation on the present occasion. He regarded recent events in our colonies as a striking object lesson in the sanitary methods that prevailed there and he thought it would be a most unfortunate thing if in the face of this object lesson they reduced their requirements in the case of colonial candidates. It was an entirely new

departure for this Council to divide candidates into two classes. It might be good for the colonial candidates, but it could not be good for the colonies themselves. Another point to be remembered was that with the present standard there was an ample supply of candidates

Mr. BROWN hoped that the report would not be sent back to the committee in this unceremonious manner, but would be discussed by the Council.

Dr. MACALISTER said that he should like to support the amendment because the report did not sufficiently explain the reasons at the back of this pressure from the Government departments and because no provision was made for limiting the proposed relaxation to the officers of these departments.

On a division being taken the amendment of Sir JOHN BATTY TUKE was rejected by a large majority. The Council thereupon agreed to receive the report and to enter it on the minutes. The consideration of the report was then taken in committee of the whole Council.

Mr. TEALE moved the adoption of the first draft rule recommended by the committee, explaining that it was the same as the existing rule on the subject.

The committee agreed to the rule.

Mr. TEALE then moved the adoption of draft rule No. 2, proposing that candidates should be separated into two classes, juniors and seniors.

Dr. MCVAIL seconded this motion. The reasons which had led the committee to divide the candidates into two classes were reasons, he said, which had been growing upon the committee ever since it took up this work.

The PRESIDENT: Cannot you give us a better name than juniors and seniors?

Dr. MCVAIL said he was seconding the proposal of the committee and perhaps, therefore, it would be for somebody else to suggest something different; he did not see how he could. The evidence had been accumulating all through the inquiry that there were many men in practice in the colonies and India in public appointments whom it was most desirable to induce to take the diploma in Public Health. What the Government departments had pressed the committee to do was to shorten somewhat the period of residence necessary in this country for obtaining the diploma and the committee thought that in the case of men of 10 years' experience the period might be shortened. Let the Council, however, clearly understand that there was no interference proposed with the standard of examination.

Dr. ATTHILL suggested that the classes might be described as A and B.

The PRESIDENT said that it was a question of professional standing, and surely some means could be devised of expressing that. He thought the words "juniors" and "seniors" most objectionable.

Mr. HORSLEY threw out the suggestion that the whole paragraph was unnecessary, because the men with the 10 years' experience could be dealt with by a proviso in the subsequent rules.

Mr. TEALE said that he was quite willing to adopt this suggestion, though he thought the paragraph in the report had done good in the way of calling attention to the matter.

Sir JOHN BATTY TUKE said that, in his opinion, the subject was much too important to be disposed of in this fashion. Clearly it was proposed to do away with a measure of education which after all was of much more consequence than examination.

Dr. MACALISTER suggested the use of these words "that a difference be made between the courses of study required of (*a*) practitioners under, and (*b*) practitioners over 10 years' standing."

Sir WILLIAM THOMSON submitted that the Council had no right to differentiate in this way between classes of candidates, and he for one would object to giving any gentleman who happened to have been in practice for 10 years a different curriculum from a gentleman who had come fresh from his ordinary medical qualification. He had seen this principle in operation and he knew where it led.

After there had been some further discussion, Mr. TEALE asked leave to withdraw his motion in its entirety. Some exception was taken to the request and the President put from the chair the question that leave be given. This was carried and the motion consequently dropped.

Dr. MCVAIL thought that the whole difficulty with regard to draft rule No. III. could be got over by the deletion of the word "junior."

The PRESIDENT: Then No. III. would be omitted altogether?

Dr. MACALISTER said that if they passed the committee's recommendation they would make it very much harder for seniors.

Dr. MCVAIL explained that if "junior" were omitted "senior" also would be omitted.

The proposal was then put and unanimously carried, the words "junior candidates" being struck out.

Mr. TEALE thereupon moved that—

"(1) Every candidate shall have produced evidence of having, after obtaining a registrable qualification, attended during six months' practical instruction in a laboratory or laboratories, British or foreign approved by the body granting the diploma, in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught."

Dr. MCVAIL seconded.

Sir CHRISTOPHER NIXON asked what was meant by instruction such as the committee proposed, especially in reference to "the pathology of diseases of animals transmissible to man."

Dr. BRUCE was of the opinion that there could be no difficulty in such a matter, and if any difficulty was experienced that could be overcome by the exhibition of pathological specimens in the laboratory.

The motion was unanimously passed.

Mr. TEALE next moved the adoption of Section (2) of recommendation III. The preamble of that, he explained, meant that it enforced six months' work.

Sir JOHN BATTY TUKE seconded.

Dr. MACALISTER pointed out that if the Council adopted the rule as drafted they would be committing themselves to the principle of classification which had been suggested by the committee—namely, that there should be a distinction made between "junior" and "senior," or they would make it harder for seniors to pass examinations than hitherto.

On the suggestion of the PRESIDENT, the recommendation was altered so that it might read: "Candidates shall have produced evidence that after obtaining a registrable qualification," &c. After some conversation,

Mr. BROWN said he thought that it would be very desirable to make a compromise on this matter. He suggested that three months of the course might run concurrently and the other three months not concurrently.

Mr. POWER gave it as his opinion that there should be at least three months given up for practical sanitary work under the supervision of a medical officer.

Mr. BROWN hoped that the Council would insist on securing in this section a period of six months—three months for work in the laboratory and three months' work non-concurrent.

Dr. MCVAIL was not prepared to accept a cutting down of the curriculum to three months, which, he argued, the proposal before the Council really meant.

Dr. MACALISTER and some other members denied the accuracy of Dr. McVail's interpretation, Sir JOHN BATTY TUKE remarking that in reality the committee's recommendation amounted practically to the addition of three months to, not their subtraction from, the curriculum.

The original proposal was withdrawn, and Mr. TEALE, seconded by Sir JOHN BATTY TUKE, moved that the new rule, so far as the preamble was concerned, should read as follows:—

"Candidates shall have produced evidence that after obtaining a registrable qualification, they have, during six months, of which at least three months shall be distinct and separate from the period devoted to laboratory work under regulation (1), been associated day by day in the duty, routine and special, of the public health administration under the supervision of," &c.

The recommendation, as thus modified, was agreed to, as also were the following modified subsections:—

(*a*) In England and Wales the medical officer of health of a county or of a single sanitary district having a population of 50,000 or a medical officer of health giving his whole time to public health work; (*b*) in Scotland a medical officer of health of a county or counties or of one or more sanitary districts having a population of 30,000; (*c*) in Ireland a medical superintendent officer of health of a district or districts having a population of 30,000; or (*d*) by a medical officer of health who is also a teacher in the department of public health of a recognised medical school.

*** The certificate of an assistant medical officer of health of a county or of a sanitary district of 50,000 population may be accepted provided the medical officer of health of the county or district permits the assistant officer to give such instruction.

Mr. TEALE explained that subsection (*d*) was not to be regarded as referring to Ireland only. It was to be taken as a general provision applicable to England and Scotland and Ireland.

Sir CHRISTOPHER NIXON moved that Ireland should be treated exceptionally and that it should have the option under subsection (*c*) of bringing in "such persons as may be

approved by the licensing bodies." He, however, was supported by the vote of only five members of the Council and before the next matter was entered upon he jocularly informed the Council that all the Irish representatives had voted for his proposal.

Mr. TEALE proposed the adoption of subsection 3, namely:—

(3) Every candidate shall produce evidence that, after obtaining a registrable qualification, he has, during three months practically observed and studied the clinical and administrative work pertaining to the medical superintendence of a hospital for infectious diseases. The three months devoted to study in this sense may be concurrent with the administrative work referred to under section (2), but not with the laboratory work of section (1).

Dr. BRUCE seconded.

Dr. MCVAIL supported the motion, as it was in his view a great advance upon the present practice.

The PRESIDENT thought "administrative" was not needed at all.

Dr. LITTLE, Dr. LOMBE ATTHILL and Sir CHRISTOPHER NIXON agreed, while Sir WILLIAM THOMSON contended that, supposing the rule were passed, the words "and administrative" would prove unworkable.

Dr. MACALISTER, seconded by Mr. YOUNG, submitted a modification of the existing rule—namely:—

That every candidate shall produce evidence that after obtaining a registrable qualification he has, during three months, attended the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.

On a division Mr. Teale's motion was supported by only six members, whereas Dr. MacAlister's proposal received 17 votes, and was unanimously passed when it was put to the Council as a substantive motion.

Mr. TEALE intimated that he would not trouble the Council with some remarks he had intended to make with reference to the classification suggested by the committee but rejected by the Council. Further he would entirely drop Section IV.

Dr. MACALISTER said that he would bring up the report on the following day.

The Council resumed and adjourned.

THURSDAY, NOV. 29TH.

The Council met again to-day and proceeded to the consideration of penal cases.

Medical News.

UNIVERSITY OF LONDON.—At the M.B. examination held in October the following candidates were successful:—

First Division.—Samuel Herbert Lee Abbott, St. George's Hospital and Oxford; Donald Johnstone McGavin, Mason College and Queen's and General Hospitals, Birmingham; James Robert Morton, London Hospital; William Payne, Westminster Hospital; William Henry Willcox, B.Sc., St. Mary's Hospital; and Louisa Woodcock, London School of Medicine and Royal Free Hospital.

Second Division.—William Fielding Addey, University College; Robert Atwood Beaver, Liverpool Royal Infirmary; Guy Black, St. Thomas's Hospital; Sidney Herbert Bown, University College; Percy Frank Braithwaite, Owens College; Charles Hildred Brodribb, St. Mary's Hospital; Charles Henry Bullen, Mason University College; James Alfred Butler, Guy's Hospital; Alfred Henry Bygott, St. Mary's Hospital; Adrian Caddy, St. George's Hospital; Charles Holt Caldicott, Mason College; James Cameron, Royal Infirmary and University of Edinburgh and London Hospital; Wilfrid Henry Coltart, Mason College; John Bernard Davey, Middlesex Hospital; Frank Sherwill Dawe, B.Sc., St. Mary's Hospital; Alec Densham, Guy's Hospital; Margaret Bernard Dobson, Harriet Rosa Delo Ford, and Sarah Louise Fraser, London School of Medicine and Royal Free Hospital; Thomas Hall Gandy, St. Bartholomew's Hospital; Edward Alfred Gates, St Thomas's Hospital; Joseph Strickland Goodall, Middlesex Hospital; William Gough, B.Sc., Yorkshire College; Louisa Hamilton, Royal Free Hospital; Mary Hannah Frances Ivens, London School of Medicine and Royal Free Hospital; Lionel Capper Johnson, Owens College and University College, Liverpool; Alfred Ernest John Lister, St. Bartholomew's Hospital; John Wishart Little, St. Thomas's Hospital; Olive McDougall, London School of Medicine and Royal Free Hospital; William Halliburton McMullin, King's College; Patrick Thurburn Manson, Guy's Hospital; Edith Nelid, School of Medicine for Women and Royal Infirmary, Edinburgh; Eugene Michael Niall, St. Bartholomew's Hospital; Cyril Alfred Rankin Niten, St. Thomas's Hospital; William Paynter Noall, Owens College and Manchester Royal Infirmary; Mabel Paine, London School of Medicine and Royal Free Hospital; Thomas Massey Pearce, St. Bartholomew's Hospital; Mary Elizabeth Phillips, London School of Medicine and Royal Free Hospital; Miles Harris Phillips, University College and Royal Infirmary, Bristol; Thomas Copeland Savage, University College; Margaret Sophia Sharp and Amy Jane Guy Smith, London School of Medicine and Royal Free Hospital; William Smith, Bristol Medical School and St. Bartholomew's Hospital; Alfred Bertram Soltau, London Hospital; Hackworth Stuart, University College; Kathleen Olga Vaughan, London School of Medicine and Royal Free Hospital; Rupert Waterhouse, St. Bartholomew's Hospital; and Florence Elizabeth Willey, B.Sc., London School of Medicine and Royal Free Hospital.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on Nov. 22nd the following were admitted to medical degrees:—

Doctor of Medicine.—Arthur Frederick Shoyer, B.A., B.C., Trinity Hall.

Bachelor of Medicine and Bachelor of Surgery.—Arthur Croft Hill, M.A., Trinity College; Francis John Nicholls, St. John's College.

Bachelor of Medicine.—Richard Ernest Sedgwick, B.A., B.C., Gonville and Caius College.

The degree of M.A. *honoris causâ* is to be conferred on Dr. G. H. F. Nuttall, Lecturer in Bacteriology and Preventive Medicine, and on Mr. T. Strangeways Pigg, M.R.C.S. Eng., Demonstrator of Pathology.—The Special Board for Medicine have had under their consideration the question of re-arranging the subjects of the Third Examination for the M.B. degree, and have prepared a report showing how the subjects of this examination may be brought into better educational sequence.

SOCIETY OF APOTHECARIES OF LONDON.—In November the following candidates passed in the subjects indicated:—

Surgery.—J. H. Beasley (Sections I. and II.), Birmingham; A. H. Brehaut (Section I.), Cambridge and King's College Hospital; J. H. Clements, University College Hospital; M. B. Fendick (Sections I. and II.), Royal Free Hospital; J. L. Halstead (Section I.), Manchester; D. J. Morgan (Sections I. and II.), St. Mary's Hospital; J. C. S. Rashleigh (Section II.), St. George's Hospital; A. T. Spanton (Section II.), Cambridge and St. George's Hospital; and V. F. Wall (Section I.), St. Mary's Hospital.

Medicine.—R. V. Cowey (Sections I. and II.), St. Mary's Hospital; R. N. de V. Dawson (Section I.), St. Thomas's Hospital; R. A. Jones (Section I.), St. Mary's Hospital; J. C. S. Rashleigh (Sections I. and II.), St. George's Hospital; and A. T. Spanton (Sections I. and II), Cambridge and St. George's Hospital.

Forensic Medicine.—A. H. Bell, Cork and Guy's Hospital; R. V. Cowey, St. Mary's Hospital; M. B. Fendick, Royal Free Hospital; R. A. Jones, St. Mary's Hospital; D. E. Lockwood, Royal Free Hospital; J. C. S. Rashleigh, St. George's Hospital; F. A. Segreda, Guy's Hospital; and P. Southan, Birmingham.

Midwifery.—A. G. H. Anthoniaz, University College Hospital; L. Bradstock, Birmingham; A. H. Brehaut, Cambridge, and King's College Hospital; A. C. Clarke, Manchester; R. Courtauld, Royal Free Hospital; J. W. Elliott, St. Mary's Hospital; M. B. Fendick and R. Gillett, Royal Free Hospital; D. T. Jones, Middlesex Hospital; O. Millauro, Westminster Hospital; D. J. Morgan, St. Mary's Hospital; and B. Rowlands, St. Bartholomew's Hospital.

The diploma of the society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery: A. C. Clarke, R. V. Cowey, J. C. S. Rashleigh, and A. T. Spanton.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following gentlemen having passed the necessary examination have been admitted Fellows of the College:—

M. A. Brennan, L.R.C.S. Irel.; T. I. Considine, L.R.C.S. Irel.; O'C. J. Delahoyde, L.R.C.S. Irel.; W. R. G. Hamilton, L.R.C.S. Irel.; R. J. Harvey, L.R.C.S. Irel.; R. S. Hawthorne, L.R.C.S. Irel.; C. A. Hayman, L.R.C.S. Irel.; N. J. Keller, L.R.C.S. Irel.; G. Q. Lennane, L.R.C.S. Irel.; J. McGinn, L.R.C.S. Edin.; M. J. C. Marmion, L.R.C.S. Irel.; A. B. Mitchell, B.Ch. Roy. Univ. Irel.; F. Nolans, L.R.C.S. Irel.; R. M. J. O'Farrell, L.R.C.S. Irel.; W. Pooley, L.R.C.S. Irel.; D. Power, L.R.C.S. Irel.; H. Ross-Todd, L.R.C.S. Irel.; R. C. Ryall, L.R.C.P. Lond.; J. Trant, L.R.C.S. Irel.; R. S. Wayland, L.R.C.S. Irel.; and A. E. Wynne, L.R.C.S. Edin.

The following gentleman passed the primary part of the examination:—

M. Malone-Lee.

MEDICAL MAGISTRATE.—Mr. Samuel P. Smith, L.R.C.P., L.R.C.S. Irel., has been appointed by the Lord Chancellor a magistrate for the borough of Croydon.

ASYLUM ACCOMMODATION IN CORNWALL.—At the last meeting of the Penzance Board of Guardians it was stated that the Cornwall County Asylum was now full. The guardians, who had a patient waiting to be removed to the asylum, decided to petition the county council to provide more accommodation at the institution.

SUPERANNUATION ALLOWANCE.—At the meeting of the Swansea Board of Guardians held on Nov. 15th it was stated that the Local Government Board had agreed to a five years' extension of the term of service of Mr. David Howell Thomas, medical officer to the Swansea Workhouse, so as to permit of his retirement upon the full superannuation allowance.

THE annual conversazione of the Royal British Nurses' Association will be held at Westminster Town-hall on Tuesday next, Dec. 4th, at 8 P.M.

HOSPITAL SUNDAY AT PLYMOUTH.—Oct. 21st was observed in Plymouth as Hospital Sunday, when £690 were collected in the various churches and chapels for the South Devon and East Cornwall Hospital, Plymouth.

BEQUEST.—The Treasurer of the British Medical Benevolent Fund has received the sum of £1000, free of legacy duty, from the executors of the late Mr. Manwaring Shurlock, M.R.C.S. Eng., L.S.A., of Chertsey.

THE DESTRUCTION OF HUNTER'S HOUSE.—The dismantlement of No. 28, Leicester-square, which is now taking place in consequence of a large improvement scheme in the locality, is interesting from the fact that it is the house at the rear of which John Hunter built his famous museum of comparative anatomy.

STOCKPORT AND DISTRICT MEDICAL SOCIETY.—The following resolution was unanimously passed at a special meeting of the above society held on Nov. 22nd:—

That this meeting of medical practitioners of Stockport and neighbourhood indignantly protest against the ignorant and insulting paragraph contained in the *Cheshire County News* of the 16th inst. in which invidious comparison is made between a notorious quack and registered medical practitioners.

The passage in the *Cheshire County News* ran as follows:—

In reference to the decision arrived at by a Yorkshire coroner's jury affecting Dr. Rawlings of Reddish it will be of interest to learn that Dr. Rawlings has since been the recipient of numerous letters from old patients and others expressing their sympathy with him, their confidence in his ability, and admiration for his character. At a meeting also the other night in a room crowded with men Dr. Rawlings fulfilled an engagement to lecture, and a most remarkable manifestation of sympathy with the medical gentleman broke out, the cheering being loud and long-continued. We need only add that an unregistered medical practitioner, however able he may be, is subject to disagreeable incidents similar to that in which Dr. Rawlings is involved, while men with not half his ability, if registered, would escape them altogether.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, Bedford-street, Strand, London.
Laboratory Directions for Beginners in Bacteriology. By V. A. Moore. 1900.

ALLEN, GEO., Charing-cross-road, London.
Annals of a Doss House. By Sydney Halifax. 1900.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
The Microscopy of the More Commonly Occurring Starches. By Hugh Galt, M.B., C.M. Glasg., D.P.H. Camb. Illustrated. 1900. Price 3s. 6d. net.

BLACKIE AND SON, Old Bailey, London, E.C.
Droll Doings. Illustrated by Harry B. Neilson. 1901. Price 6s.
With Rifle and Bayonet: a Story of the Boer War. By Captain F. S. Brereton, R.A.M.C. Illustrated. 1901. Price 5s.
In Far Bolivia: a Story of a Strange Wild Land. By Dr. Gordon Stables, R.N. Illustrated. 1901. Price 3s. 6d.
With Buller in Natal, or a Born Leader. By G. A. Henty. Illustrated. 1901. Price 6s.

CHAPMAN AND HALL, London.
What is Heat? and What is Electricity? By F. Hovenden, F.L.S., F.G.S., F.R.M.S. With Diagrams. 1900. Price 6s.

CHURCHILL, J. & A., Great Marlborough-street, London.
Elements of Human Physiology. By E. H. Starling, M.D. Lond., F.R.C.P. Fourth Edition. 1900. Price 12s. 6d.
How to Examine the Chest. By S. West, M.D. Oxon., F.R.C.P. Third Edition. 1900. Price 5s.

CLAY, WM. F., Teviot-place, Edinburgh.
A Text-book of Pathology in Relation to Mental Diseases. By W. Ford Robertson, M.D. Illustrated. 1900. Price 21s. net.

DONNAN, WM. J., Philadelphia.
Transactions of the American Surgical Association. Vol. xviii. Edited by De Forest Willard, M.D., Ph.D. 1900.

HAAS AND COMPANY, 2, Langham-place, London.
Comptes-Rendus du XII. Congrès International de Médecine, Moscou 7(19)-14(26) Août, 1897. Edited by Secretary-General W. Roth.
Les Stations de Boues Minérales de la Russie d'Europe. Par Professeur A. Scherbakov. 1897.
Grundriss der Inneren Medicin. Von Dr. Max Kahane. 1901.
La Médicine du Zemstwo en Russie. Par B. Ossepow, J. Popow, et P. Komkine.

HACHETTE ET CIE., Paris.
La Vie de Pasteur. Par René Vallery-Radot. 1900.

HEYWOOD, J., Shoe-lane, London, and Manchester.
Defects in Plumbing and Draining Work. By Francis Vacher, Medical Officer of Health of Cheshire. New Edition. Illustrated. 1900. Price 1s. net.

HODDER AND STOUGHTON, Paternoster-row, London.
Memoir of James Macartney, M.D. St. Andrews and Dublin. By Alexander Macalister, Professor of Anatomy, Cambridge. 1900. Price 6s.

LAMERTIN, H., Bruxelles.
Manuel de Bactériologie Clinique. Par M. Funck. 1901.

LONGMANS, GREEN AND CO., Paternoster-row, London.
Recent Fractures and Internal Derangements of the Knee-joint. By W. H. Bennett, F.R.C.S. Reprint from THE LANCET. Illustrated. 1900. Price 4s. 6d.

MACMILLAN AND CO., London.
A Manual of Medicine. Edited by W. H. Allchin, M.D. Lond., F.R.C.P., F.R.S. Edin. Vol. ii. 1900. Price 7s. 6d. net.

MARLBOROUGH, H., AND CO., Old Bailey, London.
Technical Words and Phrases: an English-French and French-English Dictionary. By J. A. Standring and C. A. Thimm, F.R.G.S. 1900. Price 2s. 6d.

PENTLAND, Y. J., Edinburgh.
Gynæcological Operations, exclusive of those Interfering with the Peritoneal Cavity. By Skene Keith, M.B., F.R.C.S. Edin. Illustrated. 1900.

PHILADELPHIA MEDICAL PUBLISHING COMPANY, Philadelphia.
The Surgical Treatment of Congenital and Pathological Disfigurements of the Face. Abstract of the Mutter Lectures for 1900. By J. B. Roberts, A.M., M.D. 1900.

PUTNAM'S SONS, Bedford-street, London.
Leaders in Science—Thomas Henry Huxley: a Sketch of his Life and Work. By P. Chalmers Mitchell, M.A. Oxon. 1900. Price 5s.

RICHARDS, GRANT, Henrietta-street, Covent-garden, London.
Memoirs of Edward Hare, C.S.I., late Inspector-General of Hospitals, Bengal. By E. C. Hare, Major, I.M.S. 1900. Price 5s. net.
Rectorial Addresses delivered before the University of Edinburgh, 1858-1898. Edited with an Introduction by A. Stodart-Walker, M.B., F.R.C.P. Edin. 1900. Price 7s. 6d. net.

SAMPSON LOW, MARSTON, and Co., Fetter-lane, Fleet-street, London.
Twentieth Century Practice of Medicine. Vol. xx. Edited by T. L. Stedman, M.D. 1900.

SANITARY PUBLISHING COMPANY, Fetter-lane, Fleet-street, London.
The Food Inspector's Handbook. By Francis Vacher. Third edition. Illustrated. 1900. Price 2s. 6d. net.

SAUNDERS, W. B., AND CO., 161, Strand, London, and Philadelphia.
A Manual of Personal Hygiene. Edited by W. L. Pyle, A.M., M.D. Illustrated. 1900. Price 6s. net.
The Hygiene of Transmissible Disease. Illustrated. 1899. Price 9s. net.
Fractures. By Carl Beck, M.D. With an Appendix on the Practical Use of the Roentgen Rays. Illustrated. 1900. Price 15s. net.
The Pathology and Surgical Treatment of Tumors. By N. Senn, M.D., Ph.D., LL.D. Second edition. Illustrated. 1900. Price 21s. net.
An American Text-book of Physiology. Edited by W. H. Howell, Ph.D., M.D. Second edition. Vol. i. 1900. Price 26s. net.
Lectures upon the Principles of Surgery. By C. N. Nancrede, A.M., M.D., LL.D. 1899. Price 10s. 6d. net.

SWAN SONNENSCHEIN AND CO., London.
Handbook of Practical Botany. By Dr. E. Strasburger. Translated and edited from the German by W. Hillhouse, M.A., F.L.S. Fifth edition. Illustrated. 1900. Price 10s. 6d.

WILSON, EFFINGHAM, Royal Exchange, London.
Lawyers and their Clients. A Practical Guide for the Latter. 1901. Price 2s.

The Professional Pocket-book, or Daily and Hourly Engagement Diary for 1901. In three parts. Part 1, January to April. Part 2, May to August. Part 3, September to December (Rudall, Carte, and Co., Berners-street, London, W.).—Magazines, &c., for December: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Sandow's Magazine, New Monthly, Girl's Realm, Black and White Christmas Number, World Christmas Number, Pears's Annual.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ATOCK, M. H., M.D., Ch.M. Irel., has been appointed Acting Medical Officer at Trial Bay Prison, Arakoon, New South Wales.

BEVERIDGE, A. T. G., M.B., C.M. Aberd., has been appointed Medical Officer for Robert Gordon's College, Aberdeen.

CROMMELIN, C. E., M.D. Cincinnati Medical College, Ohio, has been appointed Medical Officer and Vaccinator at Tenterfield, New South Wales.

DEY, ROBERT, M.B. Syd., has been appointed Government Medical Officer and Vaccinator at Wilcannia, New South Wales.

HADIE, JAMES, M.B., Ch.B. Melb., has been appointed Public Vaccinator for Balaclava, Victoria, Australia.

FREYER, J. K., M.R.C.S., L.R.C.P. Irel., has been appointed Government Medical Officer and Vaccinator at Campbelltown, New South Wales.

GAMBLE, MORRIS, F. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Superintendent, *pro tem*, to the Sunbury Lunatic Asylum, Victoria, Australia.

HOPE, J. W., L.R.C.P. Edin., L.S.A. Lond., has been appointed President of the Medical Board, West Australia.

JOYCE, C., M.B. Melb., has been appointed Officer of Health for the Local Board of Health, Beaconsfield, Tasmania.

KENNEDY, J. C., M.B., Ch.B. Melb., has been appointed Acting Public Vaccinator, *pro tem*, for Port Melbourne, Victoria, Australia.

KNIPERS, J. C., M.D. Jena, has been appointed Medical Officer at Cloncurry, Queensland.

LANDER, C. D., M.B., M.S. Edin., has been appointed Public Vaccinator for South Australia.

LESCHEN, H. A., M.B., Ch.M. Edin., has been appointed Superintending Medical Officer, Whitby Falls Lunatic Asylum, West Australia.

LEY, G. J., M.B. Melb., has been appointed Public Vaccinator for Stratford, Victoria, Australia.

MCDOUALL, H. C., M.R.C.S., L.R.C.P. Lond., D.P.H. Camb., has been appointed Senior Medical Officer to the Hospital for the Insane, Callan Park, New South Wales.

M'GAVIN, LAWMIE HUGH, F.R.C.S. Eng., has been appointed Assistant Surgeon to the North-west London Hospital, Kentish Town-road.

MACKIE, WM. J., M.D. Brux., L.R.C.S., L.K.Q.C.P. Irel., has been appointed Medical Officer to the Lunatic Asylum at Nelson, New Zealand.

REID, C. W., M.B., M.S. Edin., has been appointed Senior Medical Officer, Lunacy Department, Parramatta Hospital for the Insane, New South Wales.

RICHARDS, W. JONES, M.R.C.S., L.R.C.P. Lond., has been appointed Fourth Assistant Medical Officer to the Middlesex County Asylum near Tooting.

RICHARDSON, J. C. R., M.B., B.C. Camb., has been appointed Medical Officer of Health for the Saxmundham Urban Sanitary District.

ROLL, G. W., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Westminster Ophthalmic Hospital, King William-street, Strand, W.C.

ROTH, W. E., M.R.C.S. Eng., has been appointed Northern Protector of Aboriginals and an Inspector under the Pearl-sheil and Beche-de-Mer Fishery Acts, Queensland.

SMITH, WM. R., M.D. Lond., has been appointed Certifying Surgeon under the Factory Acts for the Beeston District in the County of Nottingham.

WOODHOUSE, H. C., M.B., Ch.B. Vict., has been appointed District Medical Officer, Madeley Union, vice G. L. Proctor, resigned.

ZLOTKOWSKI, F. S. N., M.B. Syd., has been appointed a Justice of the Peace for New South Wales and Queensland.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary to commence at £60 per annum, with board, washing, &c.

BRIGHTON AND HOVE LYING-IN INSTITUTION AND HOSPITAL FOR WOMEN, 76, West-street, Brighton.—House Surgeon, unmarried. Salary £80 per annum, with furnished apartments, board, gas, coals, and attendance.

BURY INFIRMARY.—Senior House Surgeon. Salary £100, with board, residence, and attendance. Also Junior House Surgeon. Salary £80, with board, residence, and attendance.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant. Tenable for three months on payment of eight guineas.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY, Chesterfield.—Resident House Surgeon for two years. Salary £100 per annum, with board, apartments, and laundry.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £150 per annum, with rooms in the institution. Applicant to board himself.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Resident House Surgeon for twelve months. Salary £100 per annum, with apartments and board.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary £40 per annum, with board and residence.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Two House Surgeons, unmarried. Salary £30 for the senior and £70 for the second, with board, lodging, and washing.

GOVERNMENT OF CEYLON.—Medical Man for the Ceylon Medical College, for the post of Registrar, Curator of Museum, and Lecturer. Salary Rs. 6000 per annum, rising by triennial increments of Rs. 500 to Rs. 8000.—Address, Private Secretary, Colonial Office, S.W.

GROVE HALL ASYLUM, Bow, London, E.—Junior Assistant Medical Officer. Salary £120 per annum, with board, furnished apartments, attendance, and washing.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum, residence, board, and washing.

HALSTEAD UNION.—Medical Officer for the Fourth District of the Union. Salary £36 per annum. Special arrangement for extra fees, &c. Applications to the Clerk, Halstead.

HOSPITAL OF ST. FRANCIS, New Kent-road, London.—Gynæcologist. Candidates must be F.R.C.S. Eng.

HOSPITAL FOR WOMEN AND CHILDREN, Leeds.—Non-resident House Surgeon for six months. Salary at the rate of £125 per annum.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

HULL ROYAL INFIRMARY.—House Surgeon for two years, unmarried. Salary 100 guineas per annum, with board and furnished apartments. Also Assistant House Surgeon for one year. Salary £60, with board and furnished apartments. Also Junior Assistant House Surgeon for one year. Salary £40, with board and lodging.

KENSINGTON DISPENSARY, 56, Bedford-gardens, Kensington.—Honorary Medical Officers. Also Honorary Anæsthetist.

LEICESTER INFIRMARY.—Assistant House Surgeon for 12 months. Salary £30, with board, apartments, and washing.

LONDON COUNTY ASYLUM, Hanwell, W.—Junior Assistant Medical Officer. Salary £150 per annum, with board, furnished apartments, and washing. Applications to the Clerk to the Asylums Committee, Office, 6, Waterloo-place, S.W.

LONDON HOSPITAL MEDICAL COLLEGE, Mile-end, E.—Assistant Demonstrator of Anatomy. Salary £90 a year.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £82 per annum, with board and washing free.

NORTHAMPTON GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £125 per annum, with furnished apartments, board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

PARISH OF BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Surgical Officer at the Workhouse Infirmary for one year. Salary £100 per annum, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Applications to the Clerk, Parish Offices, Edmund-street.

PARISH OF FULHAM.—Second Assistant Medical Officer at the Infirmary, St. Dunstan's-road, Hammersmith, W., for six months. Salary at the rate of £60 per annum, with board, furnished apartments, and washing. Apply to the Medical Superintendent at the Infirmary.

PARISH OF ST. LEONARD, Shoreditch.—Second Medical Officer of Health for the Infirmary, Hoxton-street, N., for six months. Salary at the rate of £100 per annum, with rations, washing, and furnished apartments at the Infirmary.

RHONDDA URBAN DISTRICT.—Medical Officer of Health for the district for one year. Salary £500, including travelling expenses. Applications to be made to the Clerk, Public Offices, Pentre (Glam.)

ROYAL EAR HOSPITAL, Soho, London.—House Surgeon (non-resident). Small honorarium given.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Surgeon, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROYAL HOSPITAL FOR INCURABLES, Donnybrook, Dublin.—Resident Medical Officer for one year. Salary £100 per annum, with board and furnished apartments.

ROYAL NATIONAL MISSION TO DEEP SEA FISHERMEN'S HOSPITAL VESSELS.—Young Medical Officer for service. Salary £3 3s. weekly. Apply to Mr. F. H. Wood, 181, Queen Victoria-street, London.

SEAMEN'S HOSPITAL SOCIETY ("DREADNOUGHT"), Greenwich, S.E.—House Physician for "Dreadnought" Hospital. Salary £75 per annum, with board and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Banbridge, in the county of Down; at Dorking, in the county of Surrey; at Walton-on-the-Naze, in the county of Essex; and at Halesworth, in the county of Suffolk.

THROAT HOSPITAL, Golden-square, London.—Non-resident Junior House Surgeon. Salary £100 per annum, with luncheon daily.

UNIVERSITY COLLEGE, London.—Assistant Surgeon.

WEST HERTS INFIRMARY, Hemel Hempstead.—House Surgeon and Dispenser, who shall be also Assistant Secretary, for two years, unmarried. Salary £100 per annum, with furnished rooms, board, fire, lights, attendance, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon, for six months. Board and lodging provided.

Births, Marriages, and Deaths.

BIRTHS.

DAVIS.—On Nov. 23rd, at Grand-parade, St. Leonards, Dorothy, wife of W. H. Davis, M.B., M.R.C.P., of a daughter.

JONES.—On Nov. 25th, at Mayo, Llangammarch Wells, Breconshire, the wife of W. Black Jones, M.D., B.S., of a daughter (stillborn).

NEWTON.—On Nov. 14th, at Balcombe, Sussex, the wife of Reginald Newton, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

ELWIN—GRAVES.—On Nov. 24th, at St. Alphege's, Greenwich, George Richard Elwin, M.D., of Brook House, Bromley, Kent, to Beatrice, eldest daughter of James Graves, The Grove, Blackheath.

TRESIDDER—GARDEN.—On Nov. 21st, at the parish church, Dalton-in-Furness, Morton Everard Tresidder, M.R.C.S., L.R.C.P. Lond., of Westcombe Park, Blackheath, London, to Elsie Annie daughter of the late James Garden, Hamilton House, Dalton-in-Furness.

DEATHS.

EDWARDS.—On Nov. 20th, at his residence, Tynyffordd, Colwyn Bay, North Wales, Roger Edwards, M.D. Durham, M.R.C.S. Eng., L.R.C.P. Lond., in his 50th year.

NEALE.—On Nov. 22nd, Richard Neale, M.D. Lond., of South Hampstead and Sandgate, Kent, aged 73.

RAWDON.—On Nov. 22nd, at Underbank, Elstree, Herts, suddenly, Henry Greenwood Rawdon, M.D., F.R.C.S. Edin., aged 63 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE MEDICAL PROVIDENT LEAGUE.

WE have received from a considerable number of correspondents inquiries concerning a body to be called the Medical Provident League. From a preliminary circular which is stated to be addressed to "medical practitioners who now attend members of the National Deposit Friendly Society we learn that the objects and constitution of the league are as follows:—

Objects.

1. To unite medical practitioners throughout the United Kingdom for the better defence and furtherance of their professional interests.
2. To bring about better arrangements for affording provident medical aid to the working classes.
3. To support such existent provident schemes as are equitable to medical practitioners and to oppose such schemes as are inequitable in their working or management.
4. To unite and coördinate the personal influence of medical practitioners with individual Members of Parliament in order to direct the course of any legislation which affects the interest of the medical profession or of the public health.
5. To initiate, or support, schemes incidental to, or conducive to, the furtherance of the above objects.

Constitution.

1. Membership of the League shall be open to any registered medical practitioner.
2. The members, in annual general meeting, shall elect such officers as may from time to time seem desirable and a Council to manage the affairs of the League.
3. The subscription for Foundation Members shall be half a guinea entrance fee and half a guinea annual subscription. All entrance fees shall be invested in Trustee Securities and set aside as a permanent Reserve Fund.

This information concerning the Medical Provident League is prefaced by the following letter:—

245, Kennington-road, London, S.E., November 1st, 1900.

MY DEAR SIR,

You are aware of the universal dissatisfaction throughout our profession with the methods and management of the Medical Aid Associations and similar bodies; how they are, to an ever-increasing extent, overworking and underpaying their Medical Officers; how powerless our disunited ranks seem to be to cope with the growing evils of the system; how our appeals for restrictive enactments have been made, in vain, to Councils and Colleges.

It is strongly felt that we must do as Englishmen have always done—HELP OURSELVES; and trust to our own efforts to combat the grave abuses of which we complain. The first essential is union; and it has been therefore determined to establish a MEDICAL PROVIDENT LEAGUE as an active fighting and political organisation; fighting the Medical Aid Associations, on their own ground, by giving every support to Provident Societies which will pay their medical officers fairly and treat them with the courtesy and respect which are due to members of a skilled and honourable profession; persuading one Society after another to adopt that attitude; moreover, uniting and co-ordinating the personal influence of medical men with individual members of Parliament so as to obtain due attention to our professional interests in all new legislation, and especially to secure proper payment for all medical services rendered to the State; e.g., payments for Certificates of Death.

A commencement has now been made in the fulfilment of the above programme. After prolonged consideration and negotiation the following Resolutions have been brought before, and unanimously passed by, the governing body of the NATIONAL DEPOSIT FRIENDLY SOCIETY.

(Membership, about 50,000. Invested Funds, about £250,000.)

"The GENERAL COMMITTEE of the NATIONAL DEPOSIT FRIENDLY SOCIETY, which now works in the most harmonious and satisfactory manner with several hundred MEDICAL PRACTITIONERS throughout the Country, is sincerely desirous to receive the active support and confidence of the MEDICAL PROFESSION generally, and, in particular, to accord to any representations which the Medical Officers of the Society might desire to make the fullest consideration and respect. It is, therefore, hereby RESOLVED:—

(1) That the General Committee of the National Deposit Friendly Society would welcome the formation of an Association of medical practitioners willing to attend Members of the Society upon the terms and conditions specified in the Rules of the Society.

(2) That, if such a Medical Association were formed, the General Committee would be prepared to co-opt, as acting members of the General Committee, two medical practitioners, to be nominated each year by the said Association, so that these gentlemen could represent the views and wishes of its Medical Officers upon the Governing Body of the said Society.

(3) That the said Society being about to appoint—as every other Insurance Company does—special Medical Referees to examine Applicants for Life Assurance (the new Department to be opened by this Society on January 1st next), the General Committee would be prepared to receive the Nominations of such Referees if made by the said suggested Association."

In brief, then, this Society, which is highly spoken of by all who have worked for it, offers, in return for moral support from a medical association, to give that association a voice in the management of its affairs by direct representation on its governing body; and to give it also a valuable *quid pro quo* by the power of nominating the practitioners who shall be appointed as MEDICAL REFEREES for the new LIFE INSURANCE DEPARTMENT of the Society. These appointments, as you are doubtless aware, will probably be very lucrative, *and every member of the League would, of course, be eligible for nomination.*

(*In future, as at present, any member of the Society can consult any medical practitioner he chooses, for sickness or injury. The Society merely offers valuable appointments for special Insurance work to those practitioners who will combine to give their associated aid and support to the Society.*)

It will be admitted that these concessions are wise and generous and prove the desire of this Society to stand well with the Medical Profession. It is obvious that they represent a strong foundation for the future work and success of the Medical Provident League (*vide* next page), and a remarkable encouragement to practitioners to unite together to help both themselves and their profession.

All the preliminary steps have been taken and cordial promises of help have been received. It is, therefore, proposed to found the MEDICAL PROVIDENT LEAGUE and to enrol members at once; to elect the Officers and the Council as speedily as possible, *in order to nominate members as Referees for every district. Immediate action is necessary, as those appointments must be settled in the next month.*

Under the circumstances, it is felt that, in the formation of the League, the offer of membership and its great practical advantages should be *first* made to medical practitioners who now attend members of the National Deposit Friendly Society, and I therefore address this preliminary circular to you, feeling confident that you will recognise the practical value of membership to yourself and afford us your co-operation and aid.

To avoid the financial mistake, made by most Medical Societies in the past, an Entrance Fee of half a guinea, besides an Annual Subscription of half a guinea, for FOUNDATION MEMBERS, has been decided upon, and the former amounts will be invested in Trustee securities as a Reserve Fund. It is probable, in view of the practical value of membership, that *both the Entrance Fee and the Annual Subscription will be considerably increased for future members.*

If you will fill up and return to me the appended form, your name shall be enrolled as a Foundation Member of the League; and further circulars will be sent you at once. If you do not reply, it will be assumed that you do not desire to join the movement.

I am, Dear Sir,

Yours faithfully,

J. W. J. OSWALD, M.D.,

Chairman of the Organising Committee.

Dr. Oswald's letter incloses the following post-card addressed to himself.

The Secretary, The Medical Provident League.

SIR,—I request you to place my name on the list of Foundation Members of the Medical Provident League, and as soon as the League is formed I will forward you Cheque for One Guinea; being an Entrance Fee of half a guinea, and my first Annual Subscription of half a guinea.

Qualifications.

Please write very distinctly.

Signed .....

Address.....

November.....1900.

PLEASE ANSWER THE FOLLOWING QUESTIONS.

Would you desire to be nominated for election as a Medical Insurance Referee of the National Deposit Friendly Society? .....

Would you act, if elected, as Local Secretary of the League in your District?.....

Would you act on the General Council of the League, if elected thereon?.....

We have given so much space to the printing of this circular, without abbreviation, because we have to offer unfriendly criticism of the proposals which it contains. It is because we, like the gentlemen whom Dr. Oswald addresses, "are aware of the universal dissatisfaction throughout our profession with the methods and management of the Medical Aid Association and similar bodies," and are aware, also, how well grounded this dissatisfaction is, that we feel bound to warn our readers that the league holds out nothing which should induce them to join it. The circular is a proposal for a bargain to be struck between medical men and a friendly society. The National Deposit Friendly Society desires "moral support from a medical association." The General Committee

of the National Deposit Friendly Society "is sincerely desirous to receive the active support and confidence of the medical profession." In other words, the National Deposit Friendly Society will be much obliged if medical men will combine together to act as canvassers for the society. There is no doubt of the value that such support would be to the society. What are the medical men to receive in return? Membership of a league, which they could certainly found and manage for themselves, if they saw it was needed, without the embarrassing assistance of a friendly society; and eligibility for nomination as medical referees to a life insurance scheme which has not yet been started. We think that the National Deposit Friendly Society would have all the best of the bargain and we advise our readers to refrain from filling up the card.

We are sorry to write in an antagonistic spirit to a scheme which on the face of it is an attempt to reconcile a well-managed friendly society—as we believe the National Deposit Friendly Society to be—with the medical profession. But the olive branch must be tendered in a very different way. Medical men must not be invited to act as local secretaries to a body affiliated to a friendly society, for a local secretary who does not canvass for his association is an idle name, while a local secretary who does his duty has necessarily to be a tout. (We do not use the word in an offensive sense.) If the National Deposit Friendly Society is genuinely anxious to work hand-in-hand with the medical profession we can tell it how to begin. It should co-opt as acting members of its General Committee representatives chosen by several hundred of the medical practitioners "with whom it now works in the most harmonious and satisfactory manner," and should take their views as to the rate of remuneration for medical service and the wage limit above which medical service cannot be rendered. There are other things that might be discussed in a general committee so constituted that medical interests could be properly looked after, but the two points which we have mentioned would be good ones upon which to begin.

"THE REMOVAL OF SUPERFLUOUS HAIRS."

To the Editors of THE LANCET.

SIRS,—Your correspondent "Bath" in THE LANCET of Oct. 20th, 1900, will find a recently prepared sulphuret of calcium effective in the removal of hairs. The sulphuret of calcium is easily prepared by passing sulphuretted hydrogen through milk of lime until the colour of the lime changes to a bluish tint. After a few weeks the preparation becomes weakened, due probably to the gradual oxidation of the sulphuret.

I am, Sirs, yours faithfully,

Nov. 16th, 1900. J. J. R.

"MOTOR-CARS FOR MEDICAL MEN."

To the Editors of THE LANCET.

SIRS,—Kindly allow me to say a few more words on the above subject and I will not further trouble you. First, Mr. Truman, so far as I can gather, has not said a word in support of the motor-cars for medical men's use. Secondly, the subject is not a "foreign" one to your columns as my remarks were entirely confined to the utility of motor-cars for medical men at the present time and not for general purposes. Thirdly, an art critic need not necessarily be a practical painter. Fourthly, the "man in the street" often has a shrewder notion of things in general than he is credited with.

I am, Sirs, yours faithfully,

Nov. 12th, 1900. MOTOR-CAR.

NEW EDITIONS OF SCIENTIFIC WORKS.

To the Editors of THE LANCET.

SIRS,—Every week almost sees new editions of general text-books and books on special subjects. It would be a great boon to many practitioners who, like myself, cannot afford to keep throwing away the older editions and investing in the latest and yet desire to keep up-to-date, if authors and publishers when issuing a new edition could see their way to publish an appendix giving the alterations and additions of such work. They would not be likely to lose by it, as those who can afford it would still buy the complete work, while the appendix would appeal to a wider circle. May I ask for your powerful support of this appeal?

I am, Sirs, yours faithfully,

Nov. 19th, 1900. APPENDIX.

THE LATE HARMAN JOHN TARRANT.

WE have received another letter calling our attention to the advertising methods of this unfortunate man. Tarrant died early in September in Sydney—a fact which we have learned since our last publication of reflections upon his actions.

A POINT IN ETHICS.

To the Editors of THE LANCET.

SIRS,—A and B are friendly practitioners in the same town. C is well known to both. During A's absence on holiday C sends for B because he does not wish to have the services of A's assistant whom he well knows. B tells C that he attends for A and that A must be informed of it when he returns. C agrees to this, but does not inform him. The day after A returns more medicine is sent for from B, which he declines to supply, sending a note that his attendance was for an emergency and that now, A having come home, C must apply to him. Subsequently A and B meet and the matter is mentioned by B, but A seems annoyed and says that C ought to have known better—in fact, almost blames B for going. Three months afterwards C again sends for B and says he wants him to attend and remarks that he is going to have what doctor he likes. Ought B in these circumstances to attend, and can A blame him for taking the case when C palpably wants to change his medical attendant?

I am, Sirs, yours faithfully,

Nov. 28th, 1900. NEMO.

*** B can attend C without infringing medical etiquette, but he should point out to C that such changes in medical attendance often lead to unpleasantness. It is sincerely to be hoped that A will not allow the matter to alter the harmonious relations between him and B.—ED. L.

"THE BATTLE OF THE CLUBS: A SUCCESSFUL PRECEDENT."

To the Editors of THE LANCET.

SIRS,—Under the above heading I read with much interest the annotation in THE LANCET of Nov. 24th, p. 1514, *re* the "Eastbourne Provident Medical Association" and its success. There is one point which to my mind is of great importance, and on which I should be glad of information—viz., How is the collector paid? Whether a fixed salary, or by commission, or part commission? For if either of the latter two it is obviously to his interest to cause as many persons as possible to join the association. In which case "collector" and "canvasser" are undoubtedly synonymous terms. A collector is quite as much human nature as a canvasser, and instructions to him not to canvass are futile, and in fact childish.

I am, Sirs, yours faithfully,

Ilford, Nov. 27th, 1900. C. B. TOWNSHEND.

THE PARKES MEMORIAL PRIZE.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you will inform me through the medium of your paper the conditions of award of the Parkes Memorial Bronze Medal.

I am, Sirs, yours faithfully,

Nov. 9th, 1900. DWARF.

*** The Parkes Memorial Prize is awarded triennially. It consists of a bronze medal and a sum of 75 guineas. The competition is open to executive officers on full pay of the Navy, Army, and Indian medical services, except assistant professors at Netley who are not eligible to compete during their term of office. Application should be made to the secretary, Parkes Memorial Committee, Royal Victoria Hospital, Netley.—ED. L.

CLARATMOS.

To the Editors of THE LANCET.

SIRS,—Permit me to correct a mistake which has inadvertently been inserted in THE LANCET of Nov. 24th, page 1508, *re* "Claratmos Patent Ventilating Screen." Messrs. F. W. Warren and Co. are described as the patentees, whereas I am the patentee and Messrs Warren and Co. are the manufacturers. I have used the screen in my own house and have found it invaluable, inasmuch as it admits air without impurities, a point of no small importance during the foggy winter season.

I am, Sirs, yours faithfully,

South Kensington, S.W., Nov. 26th, 1900. CALDWELL STEPHEN.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 29th, 1900.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind	Rainfall	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb	Dry Bulb	Remarks at 9 A.M.
Nov. 23	29·76	S.W.	...	70	49	38	39	40	Foggy
" 24	29·73	E.	...	52	50	39	42	44	Cloudy
" 25	29·60	W.	0·23	63	53	44	50	50	Cloudy
" 26	29·68	S.W.	0·01	59	51	45	44	45	Overcast
" 27	29·56	WSW	0·01	61	50	44	43	45	Overcast
" 28	29·19	ESE	0·04	51	49	44	47	47	Raining
" 29	29·13	E.	0·30	50	48	45	44	45	Overcast

During the week marked copies of the following newspapers have been received: *Public Health Engineer (London), Norfolk Daily Standard, Lancashire Daily Post, Science Siftings (London), Lincolnshire Echo, Birmingham Daily Post, Jersey Express, Hull News, Newcastle Daily Chronicle, Vegetarian, Liverpool Daily Post, Wiltshire Advertiser (Devizes), Norwood Review, Daily Mail (London), Blackburn Daily Telegraph, Country Life (London), Gainsborough Leader, Scarborough Daily Post, Western Mail (Cardiff), Glasgow Herald, Sheffield Daily Telegraph, Nottingham Daily Guardian, East Anglian Daily Times, Bradford Observer, Lisburn Standard, Pioneer Mail, Scotsman, Citizen, Leeds Mercury, Folkestone Express, Dundee Advertiser, Architect, Builder, Bristol Mercury, Perthshire Advertiser, Baillie, Yorkshire Post, Norwich Press, Bromwich News, Times of India, Radcliffe Times, Stirling Journal, Leith Observer,*

Modern Society, Accrington Observer, Grocer, Shields Morning Mail, Cigarette World, Rangoon Times, Reading Mercury, Hertfordshire Mercury, Local Government Chronicle City Press, Mining Journal, Consett Guardian, Australasian Medical Gazette, Morning Post, East Grinstead Observer, Local Government Journal, Manchester Courier, Surrey Advertiser, Woolwich Herald, Motor Car Journal, Fife Herald, Topical Times, Teignmouth Gazette, Rochdale Times, &c., &c.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (8th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (3rd).—SOCIETY OF ARTS.—8 P.M. Prof. J. A. Fleming: Electric Oscillations and Electric Waves. (Cantor Lecture.)

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—4.30 P.M. Annual Meeting. Cases and Specimens will be shown by Mr. A. H. Cheatle, Mr. C. H. Fagge, Dr. Lack, Mr. R. Lake, Dr. H. Tilley, Mr. P. M. Yearsley, Mr. Abbott, Mr. C. A. Ballance, and Dr. Milligan. A discussion will follow each item.

TUESDAY (4th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—Dr. S. Bontor: A Case of Carcinoma of the Breast.—Mr. A. G. R. Foulerton: A Case of Hæmangio Sarcoma of the Breast.—Dr. W. C. Bosanquet: Cystic Adenoma of the Supra-renal Body.—Dr. Thursfield: Two Cases of Congenital Morbis Cordis. And other cases.

WEDNESDAY (5th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Mr. Targett, Dr. H. Spencer, and others. Papers:—Dr. W. J. Sinclair: A Contribution to the Diagnosis and Treatment of Retroflexio-versio Uteri Gravidi.—Dr. E. R. Dawson: The Essential Factor in the Causation of Sex, a New Theory of Sex.

THURSDAY (6th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Evening.

FRIDAY (7th).—WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Dr. G. V. Poore: Dietetic Problems (Purvis Oration). Conversazione. Exhibitions will be given by Mr. J. J. Vesey, Mr. L. Miller, Dr. Pepperdene, Mr. R. Clarke, Dr. M. Dockrell, Messrs. Meyer and Metzler, Messrs. Oppenheimer and Co., and Messrs. Van Abbott and Son.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—Clinical Evening. Cases will be shown by Dr. L. Dobson, Dr. S. Taylor, Dr. R. Sinclair, Mr. C. B. Keetley, and Mr. H. Cane-Smith. Microscopic Specimens will be shown by Mr. D. Brewer.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Clinical Evening.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Discussion on the Treatment of Nasal Polypi (opened by Dr. L. Lack and Mr. C. Baber.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Davis: Some Medical Cases.

TUESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Rankin: Consultation. (Medical.)

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—5 P.M. Clinical Lecture:—Dr. C. F. Marshall: Secondary Syphilides.

WEDNESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2-3.30 P.M. Mr. H. Pinch: Class. Clinical Microscopy. 5 P.M. Sir Hector Cameron: Clinical Lecture.

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Dr. H. J. Davis: Nasal Obstruction. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Maguire: Congenital Affections of the Heart.

THURSDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Batten: Myopathies.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. St. George Reid: A Short Sketch of the Ontogony of the Auditory Apparatus (with microscopical specimens).

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Saunders: Serum Inoculation for the Prevention and Cure of Disease.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Murray: Medical Cases. (Post-graduate Course.)

FRIDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Throat.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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Communications, Letters, &c., have been received from—

A.—Rev. A. Astley, Bangor; Messrs. Armour and Co., Lond.; Messrs. Allen and Hanburys, Lond.; A. R. H.; Mr. H. H. Armstrong, Newcastle-on-Tyne.

B.—Sir T. Lauder Brunton, Lond.; Blackburn Infirmary, Secretary of; Dr. Buttersack, Berlin; Mr. H. Butterfield Northampton; Bury Infirmary, Secretary of; Messrs. Burrough-, Wel'come and Co., Lond.; Mr. C. W. Bridges, Lond.; Mr. C. M. Buel, Santa Barbara, U.S.A.; Mr. T. W. Brimacombe, Kingswood; Mr. W. A. Barham, Ipswich; Mr. F. Boehm Lond.; Dr. F. Bushnell, Plymouth; Mr. J. G. Braden, Reading.

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J.—Dr. A. H. James, Aberystwyth; J. B. B.

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